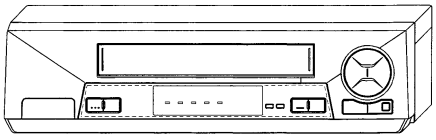
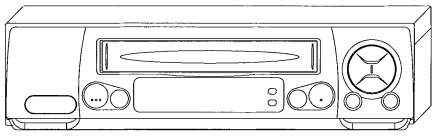
SHARP SERVICE MANUAL

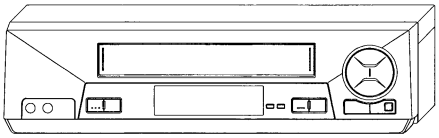
S41R7VC-A411U



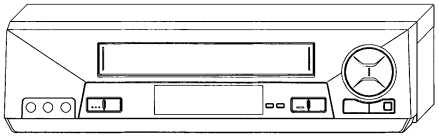
VC-A410U(B)/VC-H810U(B)



VC-A411U/VC-H811U



VC-A420U



VC-H820U

VHS VIDEO CASSETTE RECORDER

MODELS VC-A410U(B) VC-H810U(B) VC-A411U/H811U VC-A420U/H820U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

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VC-A411U/H811U ..... Models for U.S.A.
VC-A410U(B)/A420U/H810U(B)/H820U ..... Models for U.S.A/Canada

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

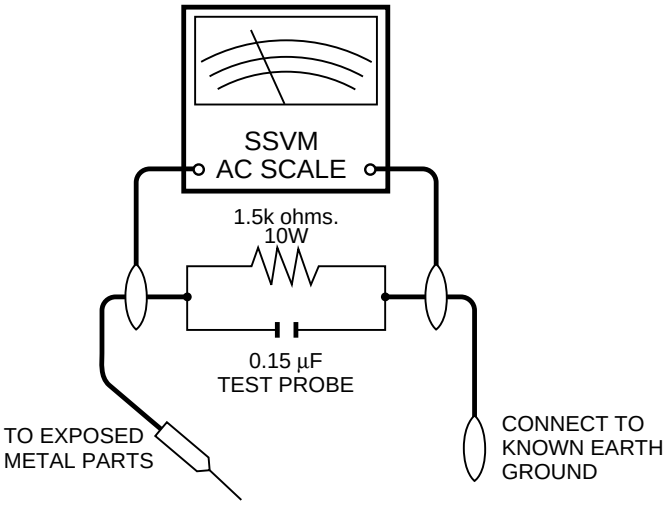
IMPORTANT SERVICE NOTES

BEFORE RETURNING THE VIDEO CASSETTE RECORDER

Before returning the video cassette recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for current in the following manner.

- Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
- Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15μF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit.
- Use an SSVM or VOM with 1000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor (See Diagram).
- Move the resistor connection to earth exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug on the set and repeat AC voltage measurements for each exposed part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video cassette recorder to the owner.



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.

This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:

3.0A 125V

This symbol mark means fast operating fuse.
For continued protection against risk of fire, replace only with same type fuse F901 (3.0A, 125V).

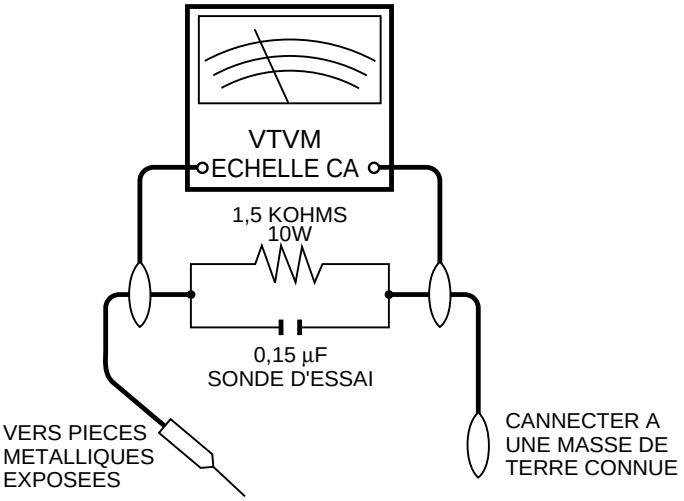
NOTES DE SERVICE IMPORTANTES

AVANT DE RENDRE LE MAGNETOSCOPE

Avant de rendre le magnétoscope à l'utilisateur, effectuer les vérifications de sécurité suivantes.

1. Vérifier toutes les gaines de fil pour être sûr que les fils ne sont pas pincés ou que le matériel n'est pas coincé entre le châssis et les autres pièces métalliques dans le magnétoscope.
2. Vérifier tous les dispositifs de protection tels que les boutons de commande non métalliques, les matériaux d'isolement, le dos du coffret, les couvercles de compartiment et ajustement ou les boucliers, les réseaux de résistance / condensateur d'isolement, les isolateurs mécaniques, etc.
3. Pour être sûr qu'il n'y a aucun risque de choc électrique, vérifier le courant de fuite de la maniére suivante.

- Brancher le cordon d'alimentation secteur directement dans une prise de courant de 120 volts. (Ne pas utiliser de transformateur d'isolement pour cet essai).
- Utiliser deux fils à pinces et connecter une résistance de 10 watts 1,5 kohm en parallèle avec un condensateur de 0,15 µF en série avec des pièces du coffret métallique exposées et une masse de terre connue telle qu'un tuyau ou un conduit d'eau.
- Utiliser un VTVM ou VOM avec une sensibilité de 1000 ohms par volt ou plus ou mesurer la chute de tension CA entre la résistance (voir diagramme).
- Déposer la connexion de la résistance à toutes les pièces métalliques exposées ayant un parcours de retour au châssis (connexions d'antenne, coffret métallique, têtes de vis, boutons et arbres de commande, etc.) et mesurer la chute de tension CA entre la résistance. Inverser la fiche CA (une fiche intermédiaire non polarisée doit être utilisée à seule fin de faire ces vérifications.) sur l'appareil et répéter les mesures de tension CA pour chaque piéce métallique exposée. Toute lecture de 0,45 Vrms (ceci correspond à 0,3 mArms CA) ou plus est excessive et signale un danger de choc qui doit être corrigé avant de rendre le magnétoscope à son utilisateur.



ATTENTION: POUR REDUIRE LES RESQUES D'INCENDIE OU DE CHOC ELECTRIQUE, NE PAS EXPOSER CET APPAREIL A LA PLUIE OU A L'HUMIDITE.

ATTENTION
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR

ATTENTION: AFIN DE REDUIRE LES RISQUES DE CHOC ELECTRIQUE, NE PAS RETIRER LE COUVERCLE, AUCUN ORGANE INTERNE NE PEUT ETRE REPARE PAR L'UTILISATEUR. CONFIER L'APPAREIL A UN DEPANNEUR QUALIFIE.

Ce symbole signale à l'utilisateur la présence d'une tension non isolée à l'intérieur de l'appareil qui peut être la cause de secousses électriques dangereuses.

Ce symbole avertit l'utilisateur que des instructions importantes relatives à l'utilisation et àl'entretien se trouvent dans le manuel accompagnant l'appareil.

PRECAUTION:

3,0A 125V

Cette marque indique le fusible à action in stantansée. Pour la protection continue contre le risque d'incendie, ne remplacer que par le fusible type F901 (3,0A, 125V).

PRECAUTIONS IN PART REPLACEMENT

When servicing the unit with power on, be careful to the section marked white all over.
This is the primary power circuit which is live.

When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.

Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: Q701 and Q702

Insert the sensor's projection deep into the upper hole of the holder. Referring to the PWB, fix the sensors tight enough.

(2) Photocoupler: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B: D708 and D709.

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors: D707 and D706.

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

1. GENERAL INFORMATION

1-1 FEATURES

Only for VC-H810U(B)/H811U/H820U

- **VHS Hi-Fi Stereo Sound**
- **Built-in MTS (Multi-channel TV Sound) Decoder**

Only for VC-A420U/H820U

- **Built-in Front AV Jacks**

Common Features

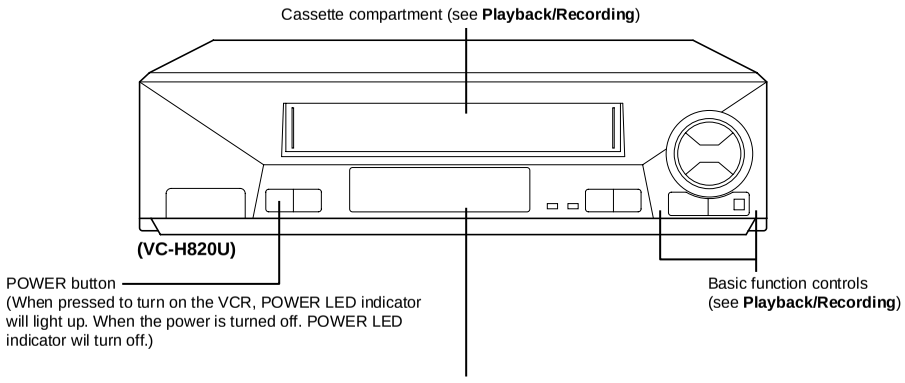
- **EZ Set Up**
- **S-VHS Quasi Playback**
- **Double-Azimuth 4-Heads**
- **19μ Clear Picture System (in EP mode)**
- **HQ System for Better Resolution and Color Reproduction**
- **Multi-Language (English/Spanish/French) OSD (On Screen Display) with Menu Screen Guidance**
- **181-channel PLL Quartz Synthesized Random Access Tuner with Automatic Channel Setting**
- **Quick Start with Full Loading Mechanism**
- **1-Year, 8 Event Programmable Timer**
- **Simple Recording Timer**
- **Universal Remote Control**
- **Sharp Super Picture**
- **5 sec. Timer Backup**
- **Field-Still/Variable Slow/Frame Advance**
- **Real-Time Counter (On Screen Display)**
- **Automatic Daylight Saving-Time (D.S.T.) Adjustment**
- **Blue Screen Noise Elimination**
- **Auto Tracking Control System**
- **Digital Program Search System (DPSS)**
- **Skip Search**
- **Instant Replay**
- **Auto Zero Back**
- **Recorded Section Auto Repeat**
- **Full Automatic Playback**
- **Tamper Proof**
- **Up to 8 Hours of Recording and Playback (with T-160 cassette)**

1-2 SPECIFICATIONS

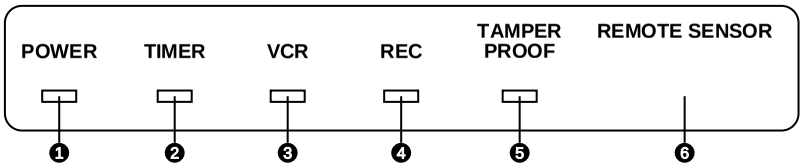
Format:	VHS NTSC Standard
Video Recording System:	Rotary Two-Head Helical Scan System
Number of Video Heads:	4
Video Signal Standard:	NTSC Color System
Audio Recording System:	1 Stationary Head for Linear Audio 2 Rotary Heads for Hi-Fi stereo (Only for Hi-Fi models)
Tape Width:	12.7 mm (1/2 inch)
Tape Speed:	(SP) 33.35 mm/sec. (1.31 i.p.s.) (LP) 16.67 mm/sec. (0.66 i.p.s.) (playback only) (EP) 11.12 mm/sec. (0.44 i.p.s.)
Maximum Recording Time:	(SP) 160 min. (T-160) (EP) 480 min. (T-160)
Channel Coverage:	VHF 2-13 UHF 14-69 CATV 1-125
Antenna Input:	75 Ohm
Video Input:	0.5 to 2.0 Vp-p, 75 Ohm unbalanced
Video Output:	1.0 Vp-p, 75 Ohm unbalanced
Audio Input:	–8 dBs, 47 kOhm unbalanced (0 dBs = 0.775 Vrms)
Audio Output:	–8 dBs, 1 kOhm unbalanced (0 dBs = 0.775 Vrms)
Hi-Fi Audio (Only for Hi-Fi models):	
Dynamic Range:	90 dB
Frequency Response:	20 Hz-20 kHz
Memory Backup:	5 sec.
Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage temperature:	–20°C to 60°C (–4°F to 140°F)
Power Source:	120 V AC, 60 Hz
Power Consumption:	18 W
Dimensions (approx.):	VC-A411U, VC-H811U: 360 (W) x 92 (H) x 253.3 (D) mm (14-3/16" x 3-5/8" x 9-31/32") : VC-A410U(B), VC-A420U, VC-H810U(B), VC-H820U: 360 (W) x 92 (H) x 255 (D) mm (14-3/16" x 3-5/8" x 10-3/64")
Weight (approx.):	2.7 kg (6 lbs)
Accessories included:	75 ohm coaxial cable, Operation manual, Infrared remote control, Battery (2 pcs.)
Note:	Hifi Models/ VC-H810U(B), VC-H811U, VC-H820U Specifications are subject to change without notice.

Major Components of Your VCR

[Front]


Cassette compartment (see **Playback/Recording**)
(VC-H820U)
POWER button
(When pressed to turn on the VCR, POWER LED indicator will light up. When the power is turned off. POWER LED indicator wil turn off.)
Basic function controls
(see **Playback/Recording**)

LED Indicator (explained throughout the operation Instruction)



❶ POWER LED indicator
This indicator lights up whenever the VCR is turned on.

❷ TIMER LED indicator
This indicator lights up when the VCR is set for timer recording, Simple Recording Timer and Recording with the Timer.

❸ VCR LED indicator
This indicator lights up when selecting "VCR" by using the **TV/VCR** button.

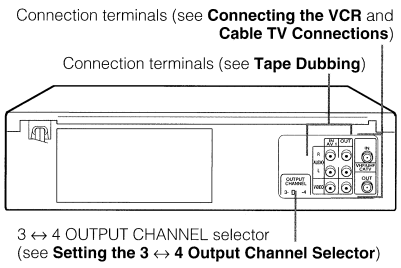
❹ REC LED indicator
This indicator lights up on during recording. This indicator flashes during REC-Pause.

❺ TAMPER PROOF (⊙🔑) LED indicator
This indicator lights up when the set mode is locked.

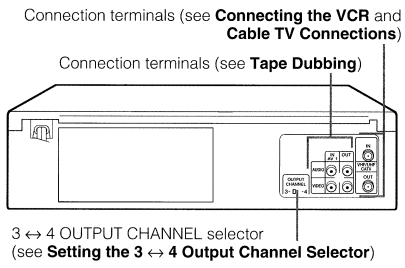
❻ Remote Sensor
Point Remote Control at this window.

[Rear]

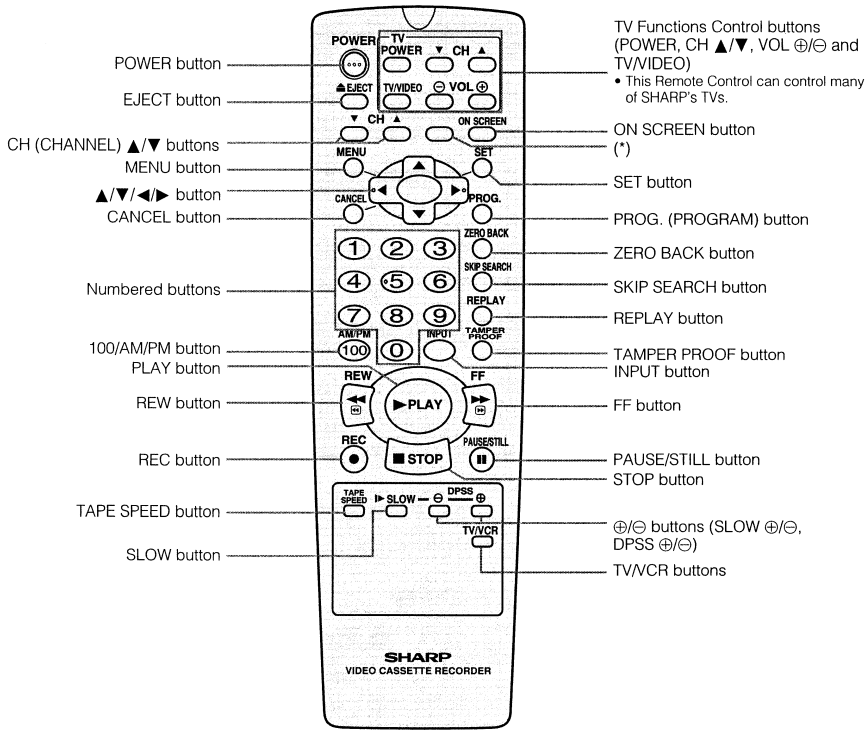
(VC-H810U(B), VC-H811U, VC-H820U)


Connection terminals (see **Connecting the VCR** and **Cable TV Connections**)
Connection terminals (see **Tape Dubbing**)
3 ↔ 4 OUTPUT CHANNEL selector
(see **Setting the 3 ↔ 4 Output Channel Selector**)

(VC-A410U(B), VC-A411U, VC-A420U)


Connection terminals (see **Connecting the VCR** and **Cable TV Connections**)
Connection terminals (see **Tape Dubbing**)
3 ↔ 4 OUTPUT CHANNEL selector
(see **Setting the 3 ↔ 4 Output Channel Selector**)

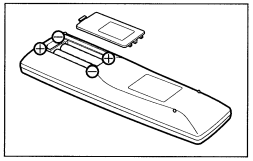
Remote Control



NOTE

***: This button cannot be used for this model.**

Inserting the Batteries



Make sure that the batteries have been properly installed first. Fit two batteries type "AA". If the remote control stops working, fit new batteries.

Ensure the batteries are fitted correctly, matching the polarities (⊕/⊖) indicated in the remote control.

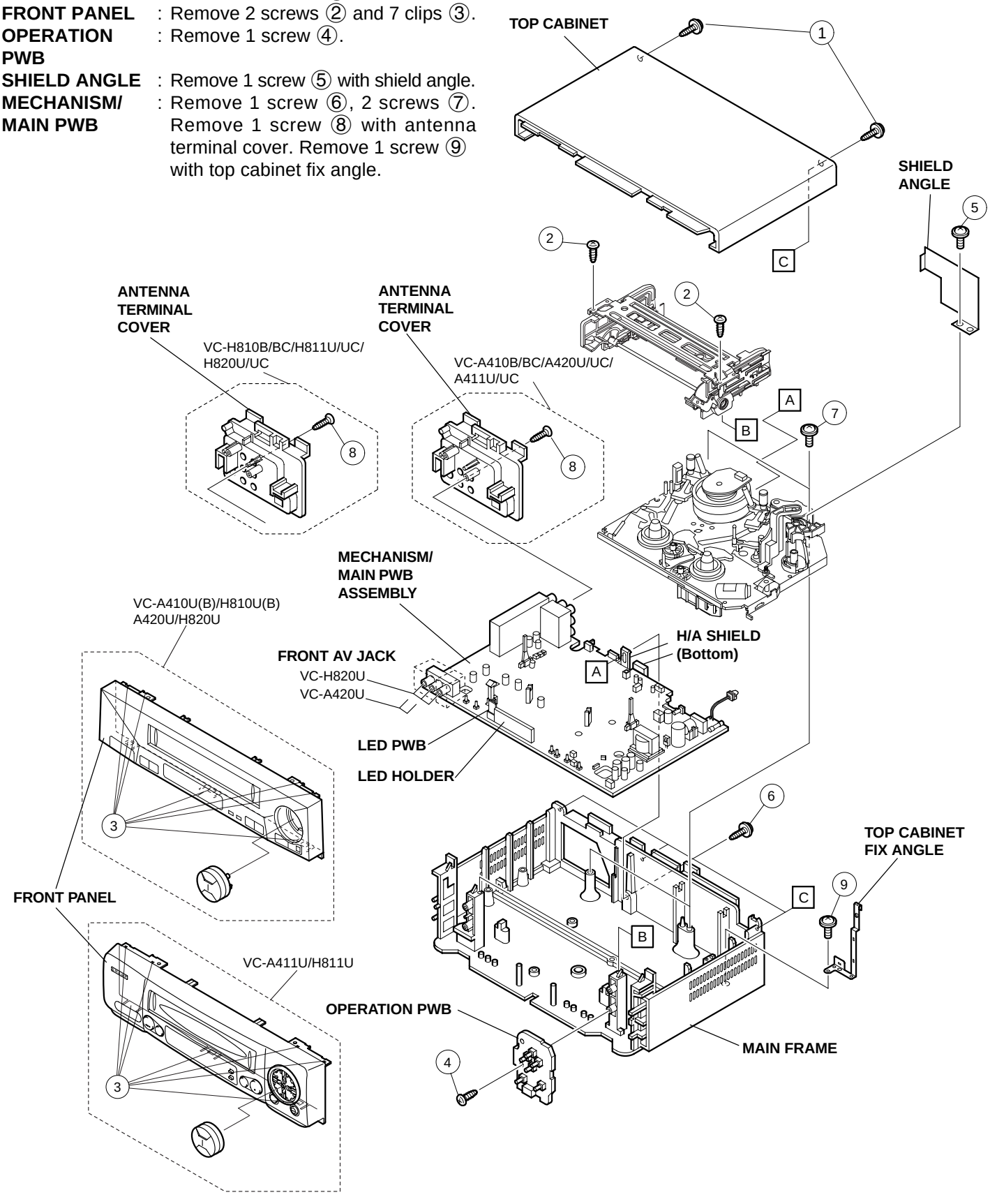
NOTE

- **After changing the batteries in the remote control, the code settings for the TV, cable box and Digital Satellite Receiver must be re-entered.**
- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly.
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- If the remote control does not function properly when new batteries are installed, remove the batteries and keep pressing any button for 10 seconds before re-installing them.

2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

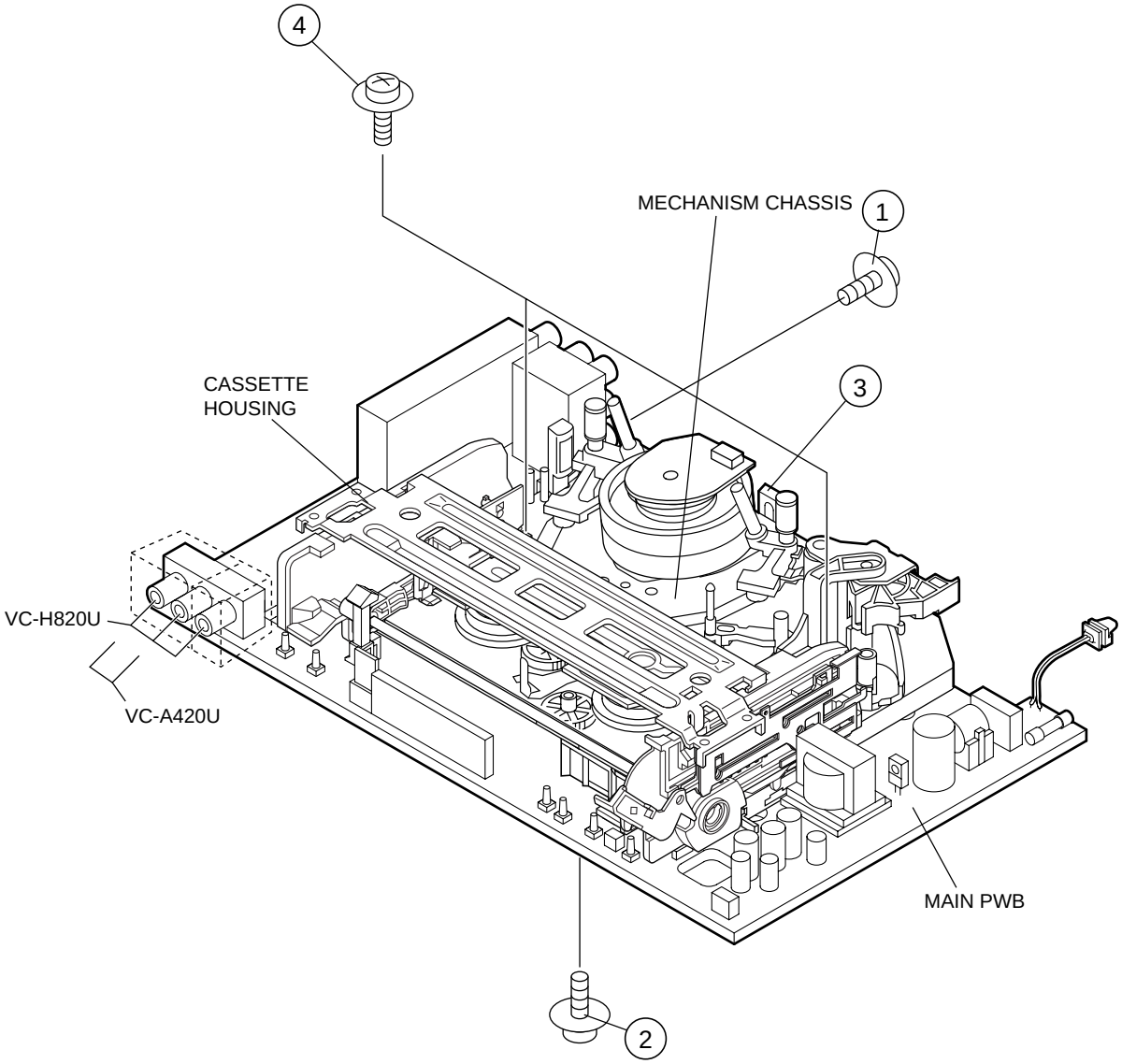
TOP CABINET : Remove 2 screws ①.
FRONT PANEL : Remove 2 screws ② and 7 clips ③.
OPERATION PWB : Remove 1 screw ④.
SHIELD ANGLE : Remove 1 screw ⑤ with shield angle.
MECHANISM/ MAIN PWB : Remove 1 screw ⑥, 2 screws ⑦. Remove 1 screw ⑧ with antenna terminal cover. Remove 1 screw ⑨ with top cabinet fix angle.



2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

1. When removing the mechanism from the main PWB, remove the antenna cover 1 screw ①, and remove the antenna terminal cover.
   Remove the PWB bottom plate 1 screw ②.
   Remove the FFC cable (AA, AD, AH) ③ which connecting the PWB and the mechanism.
   Take out vertically the mechanism so that it does not damage the adjacent parts.

2. Removing the mechanism and cassette housing.
   Remove 2 screws ④ fixing the cassette housing to the mechanism, and remove the cassette housing.



2-3 CARES WHEN REASSEMBLING

INSTALLING THE CASSETTE HOUSING

When the cassette housing is installed on the mechanism, the initial setting is essential condition.

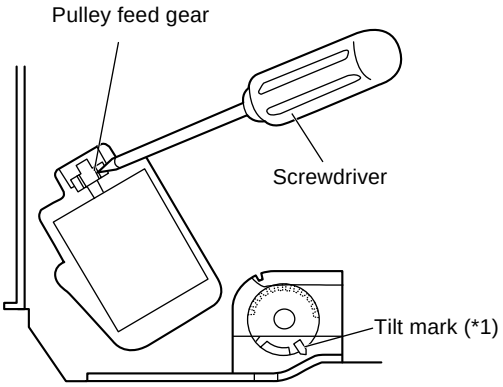
There are two initial setting methods, namely electrical and mechanical.

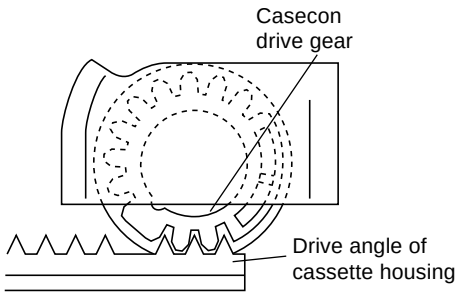
1. Electrical initial setting

So as to perform initial setting of mechanism execute the Step 1 of Installation of cassette housing. After ascertaining the return to the initial setting position (*1) install the cassette housing. (Conditions: When mechanism and PWB have been installed)

2. Mechanical initial setting

Feed the pulley feed gear of loading motor with screw driver. After ascertaining the return to the initial set position (*1) install the cassette housing in the specified position. (This method is applied only for the mechanism.)



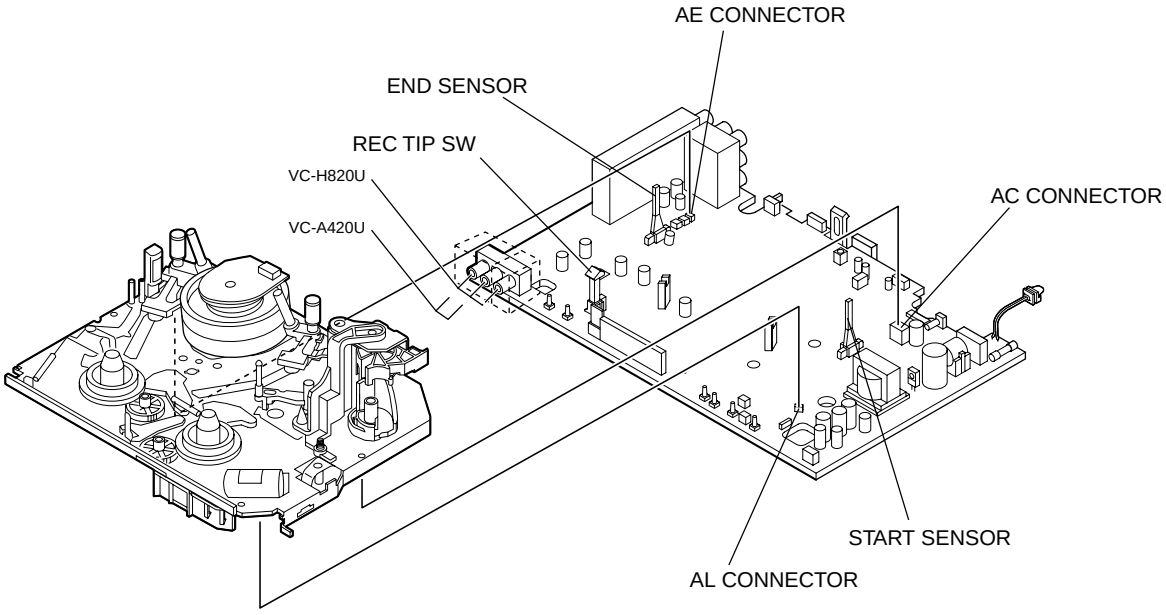


INSTALLING THE MECHANISM ON PWB

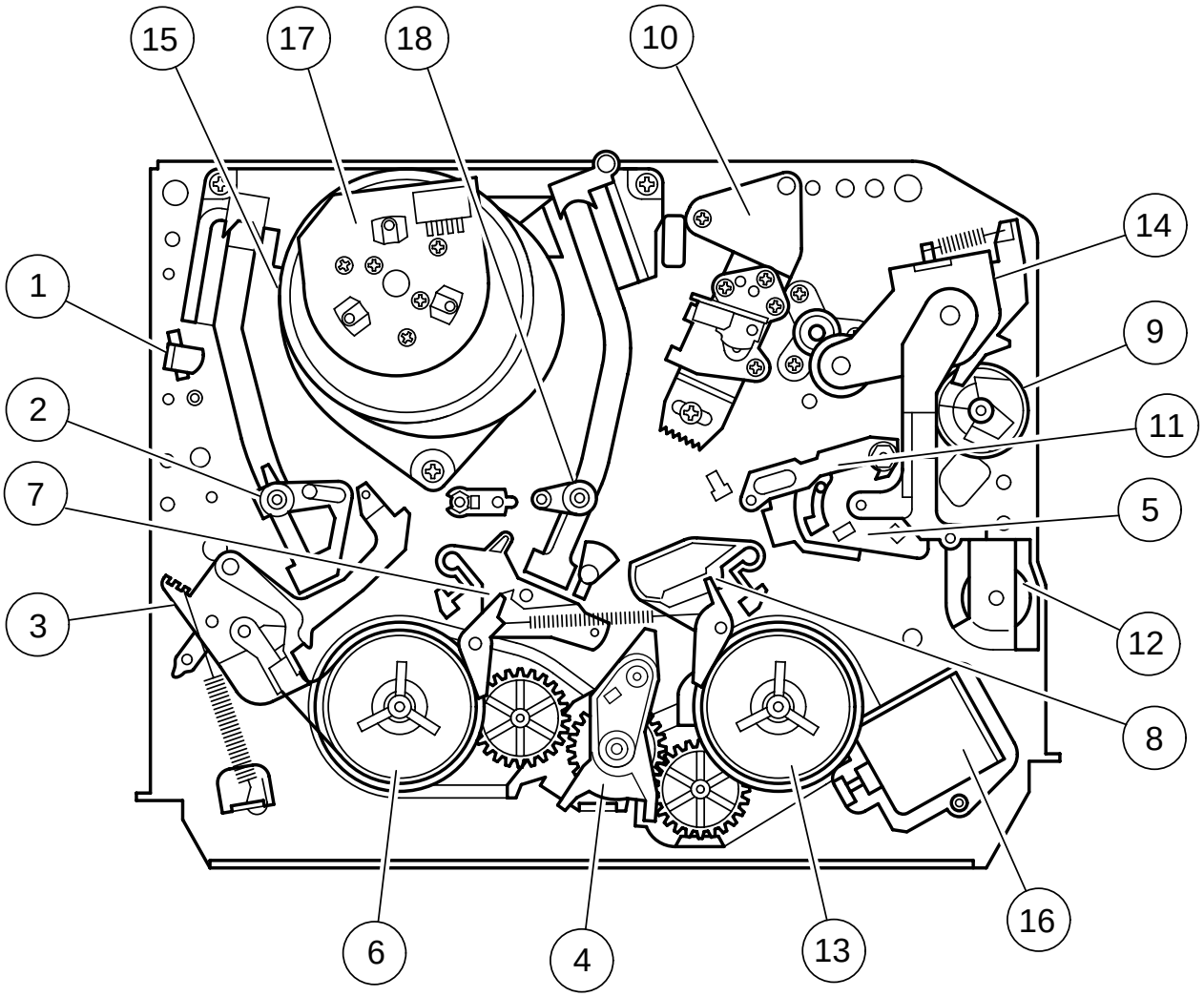
Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder joint side of main PWB.) Connect again the FFC cable (AA-MH, AD-ME, AH-MH) between the mechanism and the main PWB.

PARTS WHICH NEED PARTICULAR CARE

When installing the mechanism chassis on the PWB unit, take care so as to prevent deformation due to contact of mechanism chassis with REC TIP SW.

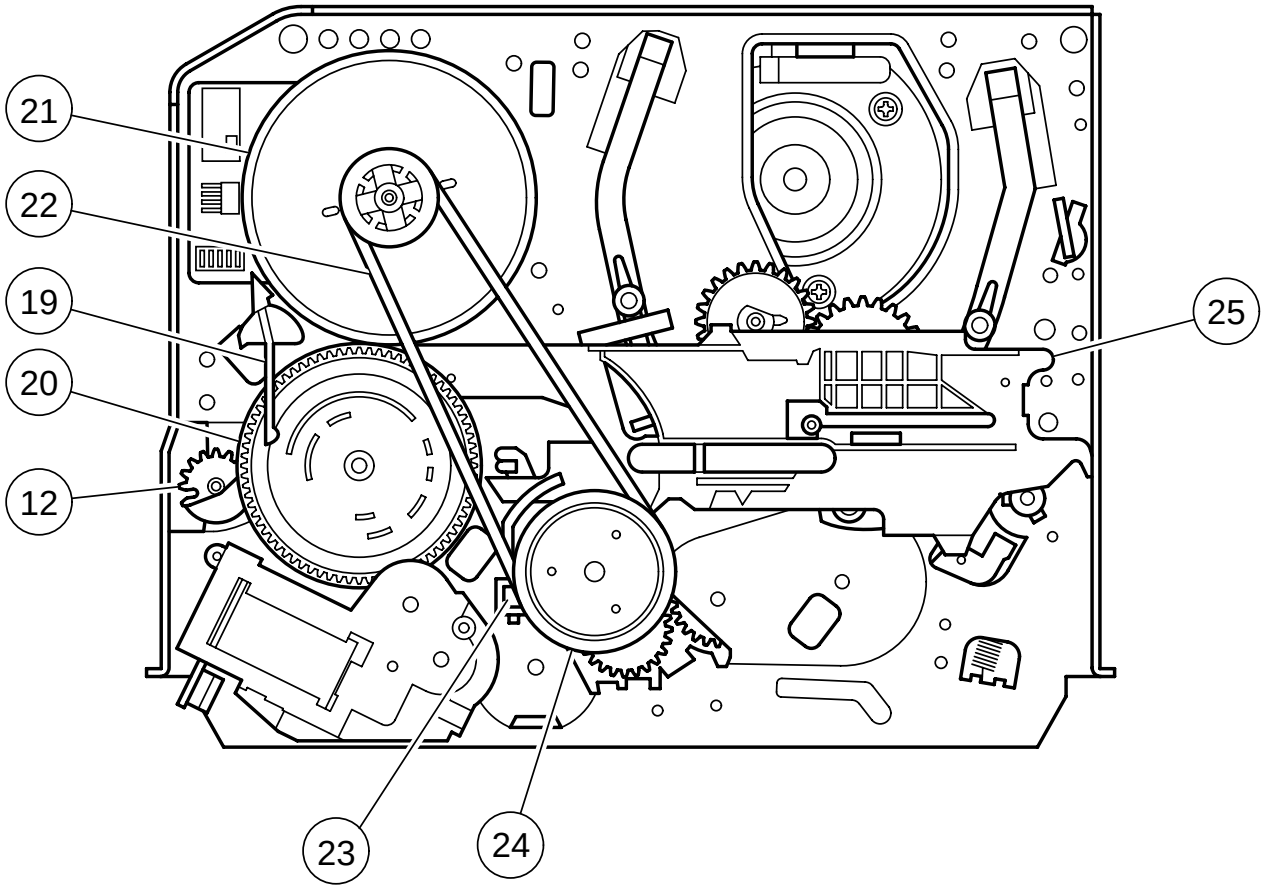


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1	Full erase head	8	Take-up main brake
2	Supply pole base ass'y	9	Pinch drive cam
3	Tension arm	10	A/C head ass'y
4	Idler wheel ass'y	11	Reverse guide lever ass'y
5	Pinch drive lever ass'y	12	Casecon drive gear
6	Supply reel disk	13	Take-up reel disk
7	Supply main brake	14	Pinch roller lever ass'y

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



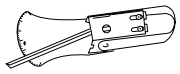
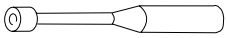
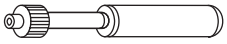
No.	Function	No.	Function
15	Drum ass'y	22	Reel belt
16	Loading motor	23	Clutch lever
17	Drum drive motor	24	Limiter pulley ass'y
18	Take-up pole base ass'y	25	Shifter
19	Slow brake lever		
20	Master cam		
21	Capstan D.D. motor		

4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

The explanation given below relates to the on-site general service (field service) but it does not relates to the adjustment and replacement which need high-grade equipment, jigs and skill. For example, the drum assembling, replacement and adjustment service must be performed by the person who have finished the technical courses.

4-1 MECHANISM CONFIRMATION ADJUSTMENT JIG

So as to perform completely the mechanism adjustment prepare the following special jigs. So as to maintain the initial performance of the machine the maintenance and check are necessary. Utmost care must be taken so that the tape is not damaged. If adjustment needs any jig, be sure to use the required jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1.	Torque Cassette Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
2.	Torque Gauge	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
		JiGTG1200	CN		
3.	Torque Gauge Head	JiGTH0006	AW		
4.	Torque Driver	JiGTD1200	CB		When fixing any part to the threaded hole using resin with screw, use the jig. (Specified torque 5 kg)
5.	Master Plane Jig and Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
		JiGMP0001	BY		
6.	Tension Gauge	JiGSG2000	BS		There are two gauges used for the tension measurements, 300 g and 2.0 kg.
		JiGSG0300	BF		
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.
8.	Reverse guide height adjustment box driver	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).
9.	Alignment Tape				These tapes are especially used for electrical fine adjustment.
		VROATSV	CD		525 Monoscope: Audio 7k, HiFi Audio —, Track 58µm NTSC Color Bar: Audio 1k, HiFi Audio —, Track 58µm
		VROEFZCS OR VROEFZHS	BG		Black Level (only SYNC) signal: Audio 1k, HiFi Audio —, Track 19µm
			BH		Audio 2.3k
10.	Guide roller height adjustment driver	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
11.	X value adjustment gear driver	JiGDRiVER-6	BM		For X value adjustment
12.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

4-2 MAINTENANCE CHECK ITEMS AND EXECUTION TIME

Perform the maintenance with the regular intervals as follows so as to maintain the quality of machine.

Parts \ Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y	□	□	□	□	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup guide shaft	□	□	□	□		Clean tape contact part with the specified cleaning liquid.
Reverse guide	□	□	□	□		
Slant pole on pole base	□	□	□	□		
Full erase head	□	□	□	○	Colour and beating	Clean tape contact area with the specified cleaning liquid.
A/C head	□	□	□	○	Small sound or sound distortion	
Upper and lower drum ass'y	□	○□	○□	○□	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	
Capstan D.D. motor	□	□	□	□	No tape running, uneven colour	
Pinch roller	□	□	□	□	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt		□		○	No tape running, tape slack, no fast forward/ rewind motion	
Tension band ass'y				○	Screen swaying	
Loading motor				○	Cassette not loaded or unloaded	
Idler ass'y				○	No tape running, tape slack	
Limiter pulley		□△		□○		
Supply/take-up main brake levers				○	Tape slack	

NOTE ○ : Part replacement. □ : Cleaning △ : Apply grease
<Specified> Cleaning liquid Industrial ethyl alcohol

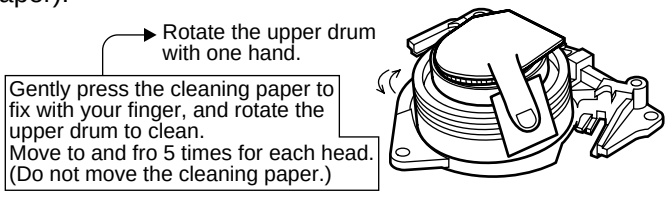
* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

Video head cleaning procedure

1. Apply one drop of cleaning liquid to the cleaning paper with the baby oiler.
2. Gently press the cleaning paper against the video head to fix your finger, and move the upper drum so that each head is passed to and fro 5 times (do not move the cleaning paper).
3. Wipe with the dry cleaning paper.

Notes :

- Use the commercially available ethanol of Class 1 as cleaning liquid.
- Since the video head may be damaged, do not move up and down the cleaning paper.
- Whenever the video head is cleaned, replace the cleaning paper.
- Do not apply this procedure for the parts other than the video head.


Rotate the upper drum with one hand.
Gently press the cleaning paper to fix with your finger, and rotate the upper drum to clean.
Move to and fro 5 times for each head.
(Do not move the cleaning paper.)

Parts Code	Description	Code
ZPAPRA56-001E	Cleaning Paper	AW
ZOiLR-02-24TE	Babe Oiler (Spoit)	AH

4-3 REMOVING AND INSTALLING THE CASSETTE HOUSING

• Removal

1. In the cassette removing mode, remove the cassette.
2. Unplug the power cord.
3. Remove in the following numerical order.
   a) Remove two screws ①.
   b) Slide and pull up the cassette housing control.

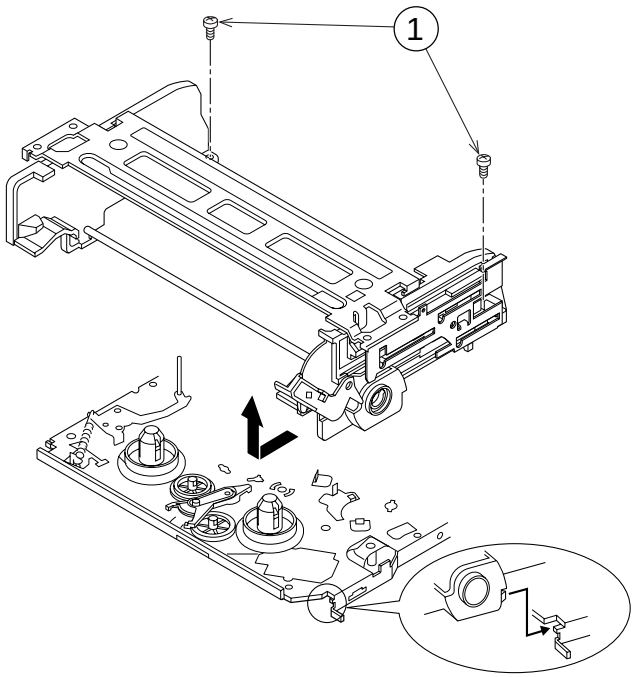


Figure 4-1.

• Reassembly

1. Before installing the cassette housing control, short-circuit between TP803 and TP802 provided at operation PWB, press the eject button. The casecon drive gear turns and stops when the positioning mark appears. Engage two teeth of casecon drive gear with the three teeth of casecon drive angle gear, and set on the mechanism chassis as shown below.

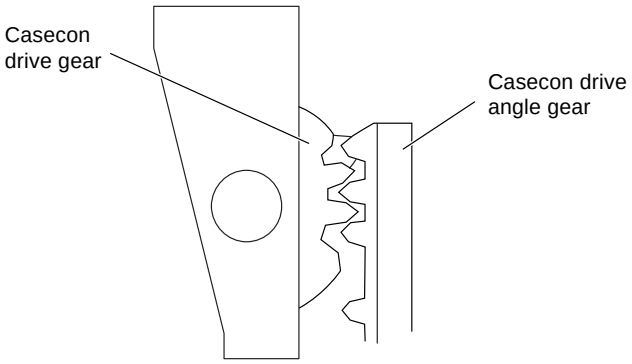


Figure 4-2.

2. Install in the reverse order of removal.

Notes:

1. When fitting the S/E sensor holder to the cassette controller frame L/R, take care.
2. Misengagement of teeth of casecon drive gear and drive angle gear causes malfunction. (The cassette cannot be set, load and ejection are repeated).
3. In the case when you use the magnet screw driver, never approach the magnet driver to the A/C head, FE head, and drum.
4. When installing or removing, take care so that the cassette housing control and tool do not contact the guide pin or drum.
5. After installing the cassette housing control once perform cassette loading operation.

4-4 TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit between TP803 and TP802.
3. Plug in the power cord.
4. Turn off the power switch.
   (The pole bases move into U.L.position.)
5. Open the lid of a cassette tape by hand.
6. Hold the lid with two pieces of vinyl tape.
7. Set the cassette tape in the mechanism chassis.
8. Stabilize the cassette tape with a weight (500g) to prevent floating.
9. Turn on the power switch.
10. Perform running test.

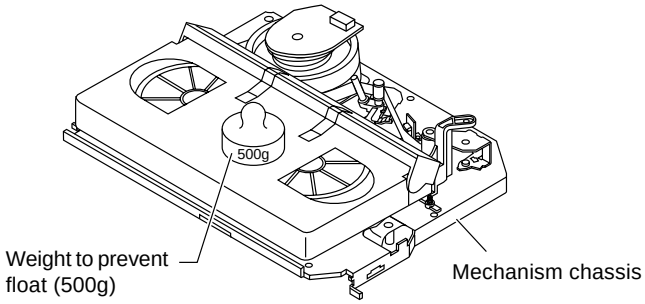


Figure 4-3.

Note:

The weight should not be more than 500g.

To take out the cassette tape.

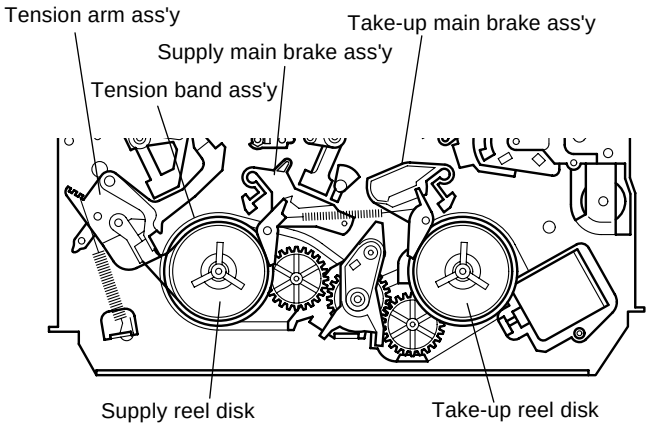
1. Turn off the power switch.
2. Take out the cassette tape.

4-5 REEL DISK REPLACEMENT AND HEIGHT CHECK

- **Removal**

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm ass'y.
3. Remove the Supply/Take-up main brake ass'y.
4. Open the hook at the top of the reel disk, and remove the reel disk.

Note:
Take care so that the tension band ass'y and main brake ass'y (especially soft brake) are not deformed.



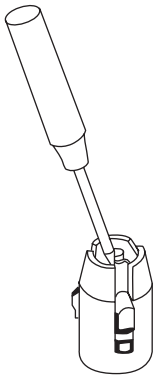


Figure 4-4.

Note:
When the tension band ass'y is pressed in the direction of the arrow for removal, the catch is hard to be deformed.

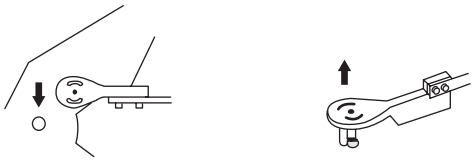


Figure 4-5.

- **Reassembly (Supply reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Match the phases of reel disk and reel relay gear, and set the new reel disk.
3. After checking the reel disk height, wind the tension band ass'y around the reel disk, and insert into the hole of tension arm ass'y.
4. Assemble the Supply main brake ass'y.

Notes:
1. When installing the reel disk, take due care so that the tension band ass'y is not deformed and grease does no adhere.
2. Do not damage the Supply main brake ass'y. Be careful so that grease does not adhere to the brake surface.

- **Reassembly (Take-up reel disk)**

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake ass'y.

Note:
1. Take care so that the Take-up main brake ass'y is not damaged. Take care so that grease does not adhere the brake surface.
2. After reassembly, check the video search rewind back tension (see **4-10**), and check the brake torque (see **4-14**).

- **Height checking and adjustment**

Note:
1. Set the master plane with due care so that it does not contact the drum.
2. When putting the master plane, shift the reverse guide a little in the loading direction. Care must be taken since excessive shift results in damage.

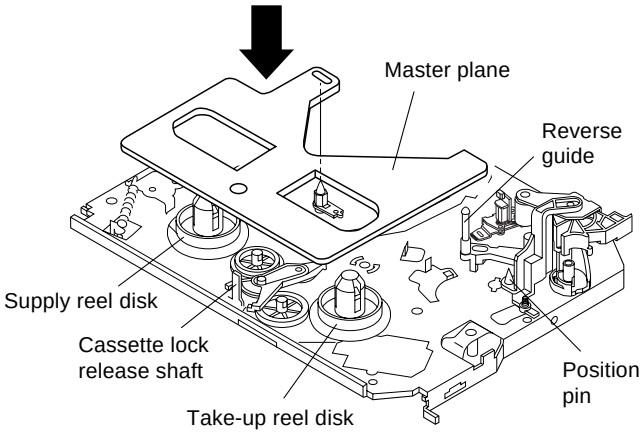


Figure 4-6.

Note:
- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:
Whenever replacing the reel disk, perform the height checking and adjustment.

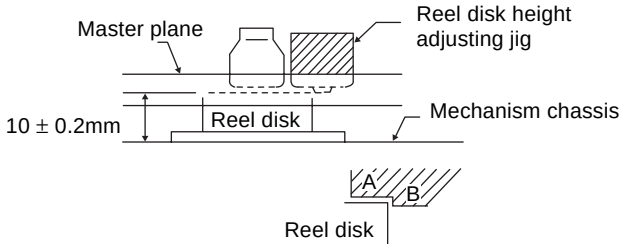


Figure 4-7.

4-6 CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
2. Press the FF button.
3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

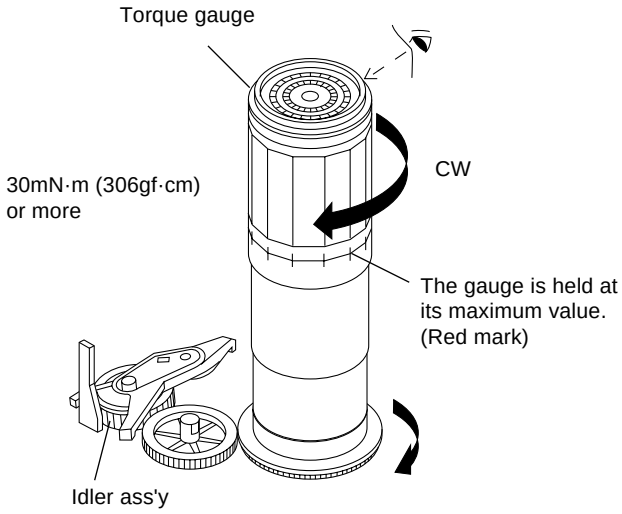


Figure 4-8.

- **Adjustment**

1. If the FF winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, and check again.
2. If the torque is less than the set value, replace the reel belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

4-7 CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Press the rewind button.
3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.

- **Checking**

1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CCW direction.
2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

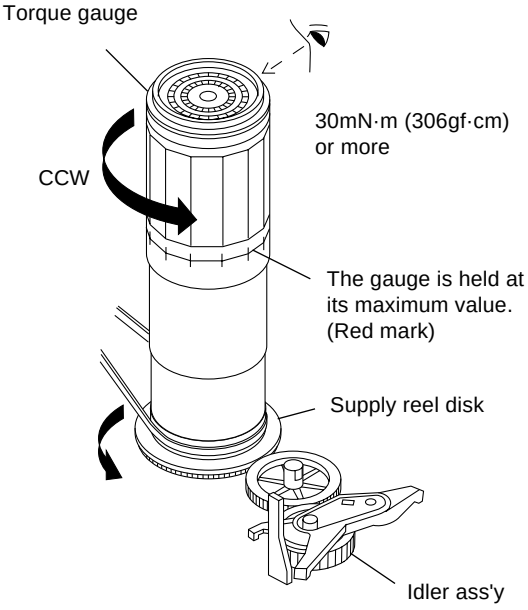


Figure 4-9.

- **Adjustment**

1. If the rewind winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, rewind again, and check the winding-up torque.
2. If the winding-up torque is still out of range, replace the drive belt.

Notes:
1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

4-8 CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**
- **Turn off the power switch.**
- **Open the cassette torque meter lid, and fix it with tape.**
- **Load the cassette torque meter into the unit.**
- **Put the weight (500g) on the cassette torque meter.**
- **Turn on the power switch.**
- **Press the picture record button, and set EP picture record mode (x3).**

Set value EP6.9 ± 2.5mN·m (70 ± 25gf·cm)

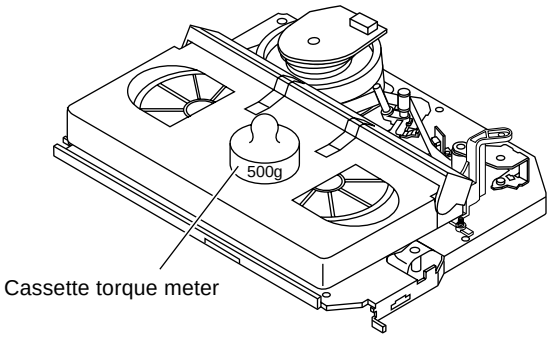


Figure 4-10.

- **Checking**

1. Make sure that value is within the setting 6.9 ± 2.5mN·m (70 ± 25gf·cm).
2. The winding-up torque fluctuates due to variation of rotation torque of limiter pulley ass'y. Read the center value of fluctuation as setting.
3. Set the EP record mode (x3) and make sure that the winding-up torque is within setting.

- **Adjustment**

If the playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:
When the torque cassette is set, put a weight (500g) to prevent rise.
When the cassette torque meter is taken out.
Turn off the power switch.

4-9 CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- **Remove the cassette housing control assembly.**
- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**
- **Setting**

Press the playback button and rewind button to set the video search rewinding mode.

- **Checking**

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value 14.0 ± 3.9mN·m. (144 ± 40gf·cm)

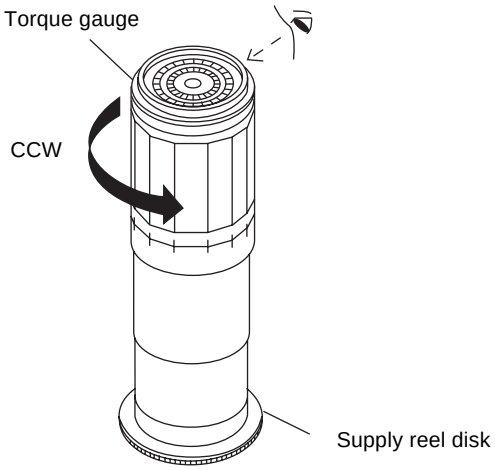


Figure 4-11.

Note:
Surely put the torque gauge on the reel disk to measure. If the torque gauge is raised, accurate measurement is impossible.

- **Adjustment**

If the rewinding playback winding-up torque is not within the setting, replace the limiter pulley assembly.

Note:
The winding-up torque fluctuates due to variation of rotation torque of supply reel disk. Read the center value of fluctuation as setting.

4-10 CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Checking**

1. After pressing the play button, press the rewind button, and set the video search rewind mode.
2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value 3.4 ± 1.5mN·m (35 ± 15gf·cm).

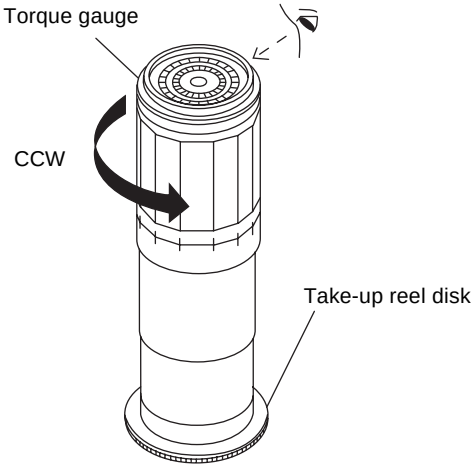


Figure 4-12.

Notes:

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

4-11 CHECKING THE PINCH ROLLER PRESSURE

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Checking**

Press the play button to set the playback mode.

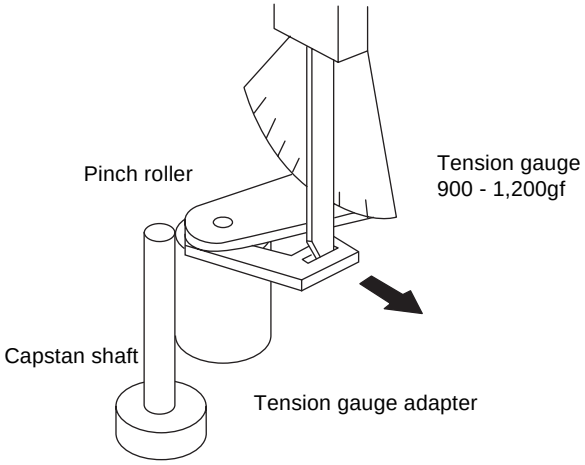


Figure 4-13.

1. Detach the pinch roller from the capstan shaft. Do not separate excessively. Or the pinch lever and pinch double action lever may disengage.
2. Engage the tension gauge adapter with the pinch roller shaft, and pull in the arrow direction.
3. Gradually return the pinch roller, and measure the pulling force when the pinch roller contacts the capstan shaft.
4. Make sure that the measured value is within setting 8.8 N to 11.8 N (900 to 1,200gf).

4-12 CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Setting**

1. Turn off the power switch.
2. Open the cassette tape (T-120), and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette tape.
5. Turn on the power switch.
6. Make the adjustment with the beginning of a T-120 tape.

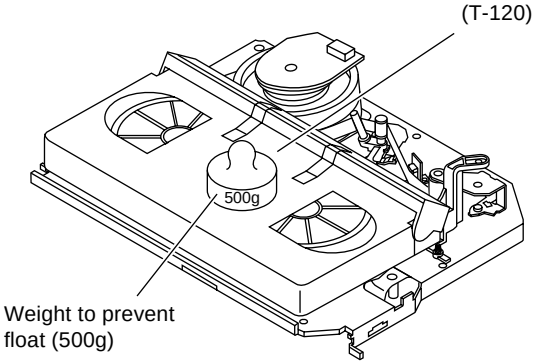
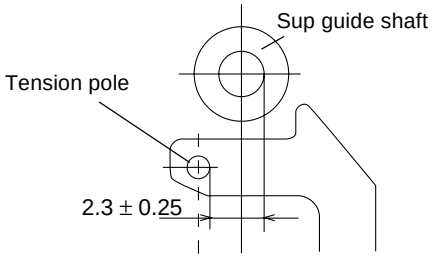


Figure 4-14.

- **Checking**

1. Set a cassette tape, push the REC button to place the unit in the SP record mode. Now check the tension pole position.

2. Visually check to see if the right edge of the tension pole is within the 2.3 ± 0.25 from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a T-120 tape.

Figure 4-15.

At left side from the center line

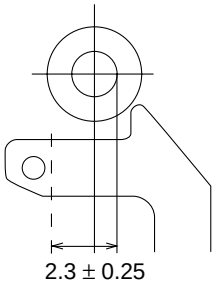


Figure 4-16.

Insert the slotted screwdriver in the tension pole adjuster, and rotate counterclockwise.

At right side from the center line

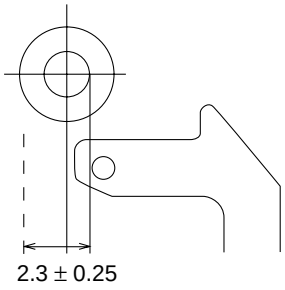


Figure 4-17.

Insert the slotted screwdriver in the tension pole adjuster, and rotate clockwise.

Tension pole adjuster adjusting range

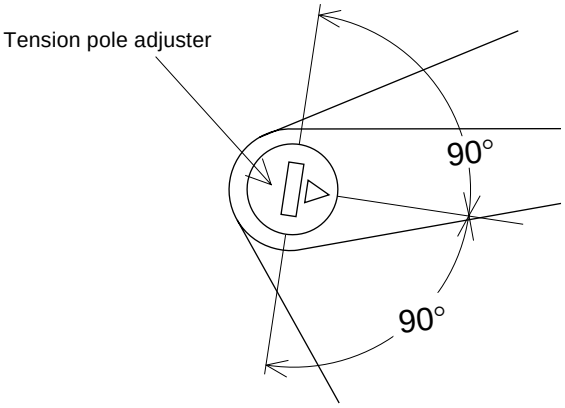


Figure 4-18.

Adjust so that the delta mark of tension pole adjuster is within 90° range (left, right).

4-13 CHECKING AND ADJUSTMENT OF RECORD/PLAYBACK BACK TENSION

- **Remove the cassette housing control assembly.**
- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**
- **Setting**

1. Turn off the power switch.
2. Open the torque cassette meter and fix with tape.
3. Set the cassette tape in loading state.
4. Put the weight (500g) on the cassette torque meter.
5. Turn on the power switch.

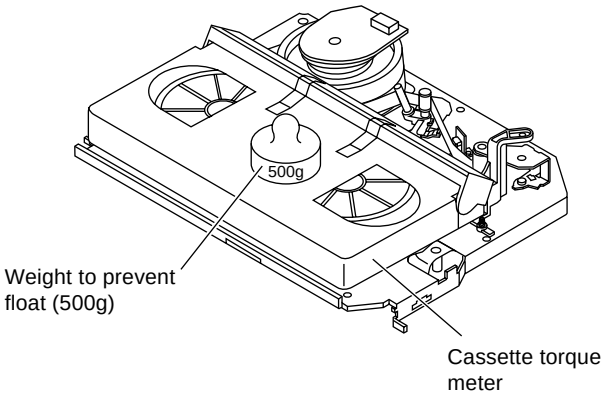


Figure 4-19.

- **Checking**

1. Push the REC button to place the unit in the SP record mode.
2. At this time ascertain that the back tension is within the setting (36.5 to 52g·cm) by seeing the indication of torque cassette meter.

- **Adjustment**

1. If the indication of torque cassette meter is lower than the setting, shift the tension spring engagement to the part A.
2. If the indication of torque cassette meter is higher than the setting, shift the tension spring engagement to the part B.

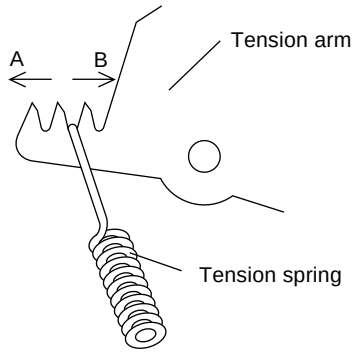
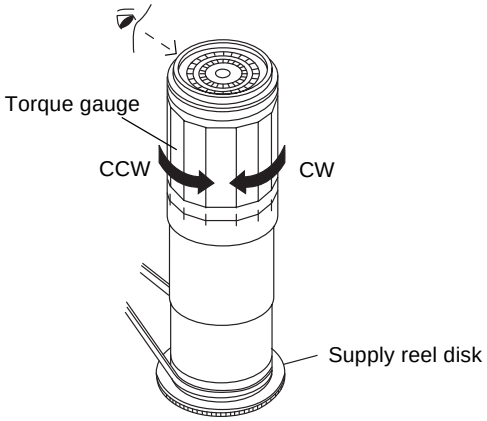


Figure 4-20.

4-14 CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**



CCW:	2.9~9.8mN·m (30~100gf·cm)
CW:	4.9~13.7mN·m (50~140gf·cm)

Figure 4-21.

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

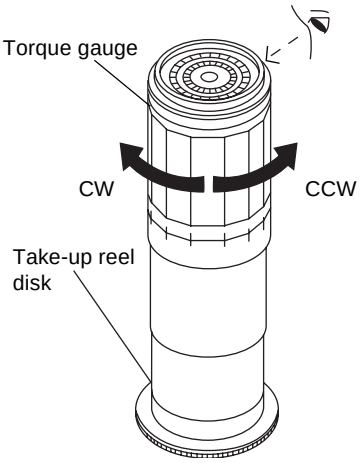
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the power cord.

- **Checking**

Turn the torque gauge at a rate of about one turn/2 sec in the CW direction/CCW direction with respect to the supply reel disk so that the reel disk and torque gauge pointer rotate at equal speed, and make sure that the value is within the setting (CW direction: 4.9 to 13.7mN·m (50 to 140gf·cm); CCW direction: 2.9 to 9.8mN·m (30 to 100gf·cm).

- **Checking the brake torque at the take-up side**



CCW:	4.9~13.7mN·m (50~140gf·cm)
CW:	3.9~10.8mN·m (40~110gf·cm)

Figure 4-22.

- **Remove the cassette housing control assembly.**

- **After short-circuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.**

- **Setting**

1. Switch from the FF mode to the STOP mode.
2. Disconnect the power cord.
3. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.

- **Checking**

1. Turn the torque gauge at a rate of about one turn/2 sec in the CCW direction/CW direction so that the reel disk and torque gauge pointer rotates at equal speed and make sure that the value is within the setting (CCW direction: 4.9 to 13.7mN·m (50 to 140gf·cm), CW direction: 3.9 to 10.8 mN·m (40 to 110gf·cm).

2. Adjustment of the brake torque at the supply side and the take-up side

- Unless the supply side brake torque or take-up side brake torque is within the setting, clean the felt surface of reel disk (supply, take-up) brake lever, check again the brake torque.
- If value cannot be set within the setting yet, replace the main brake ass'y or main brake spring.

4-15 REPLACEMENT OF A/C (AUDIO/CONTROL) HEAD

1. Remove the cassette housing control assembly.
2. In unloading state unplug the power cord.

- **Removal**

1. Remove the screws ①②③, Azimuth screw, Tilt screw.
2. Unsolder the PWB fitted to the A/C head.

Notes:

1. When replacing, never touch the head. If you touched, clean with the cleaning liquid.
2. When removing the screw ③, take care so that the spring may out.

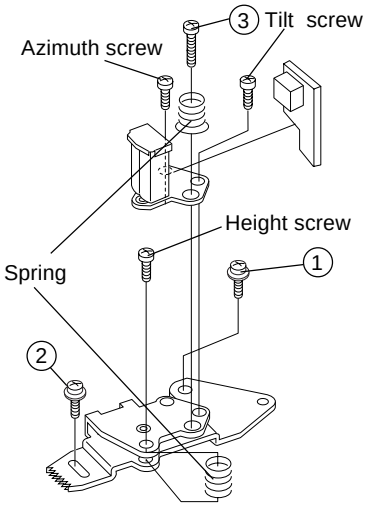


Figure 4-23.

- **Replacement**

1. Solder the removed PWB to the new head assembly.
2. Adjust the height from the A/C head arm (lower surface) to the A/C head plate to 10.8mm with slide calipers. (3 places of azimuth screw section, tilt screw section and A/C head front section) (See the figure below.)

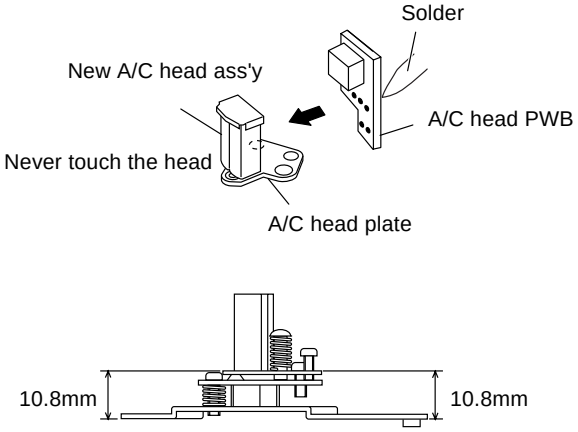


Figure 4-24.

3. Align the left end of gear of A/C head arm with the punched mark of chassis, tentatively tighten the screws ① and ② so as to ensure smooth motion of A/C head arm. Tentative tightening torque must be 0.15 to 0.20 N·m (1.5 to 2.0kgf·cm).

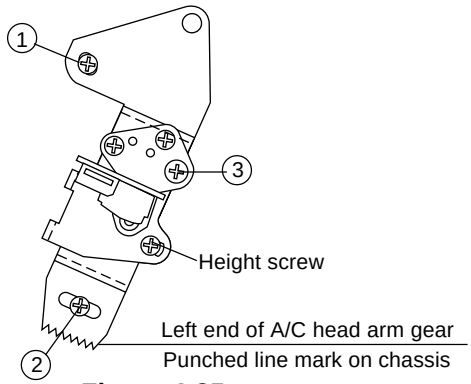


Figure 4-25.

Note:

1. If the screws ① and ② are tighten tentatively too loose, the azimuth and height of A/C head may change when they are finally tightened. Therefore care must be taken.
2. After completion of A/C head be sure to adjust tape running. (Execute the running adjustment by the method described in **4-18**.)

4-16 A/C HEAD HEIGHT ROUGH ADJUSTMENT

- **Setting**

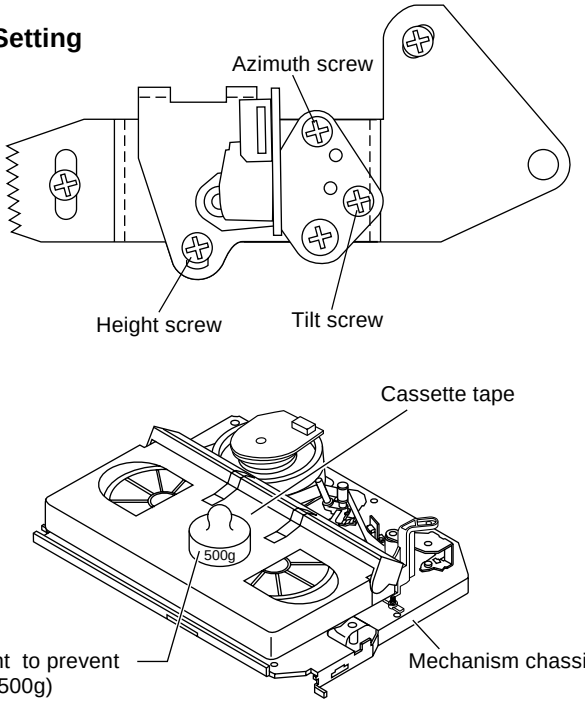


Figure 4-26.

1. Set the cassette tape in the unit.
2. Press the PLAY button to put the unit in the playback mode.
3. Roughly adjust the height of the A/C head by turning the height screw until the tape is in the position shown below.

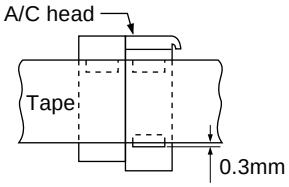


Figure 4-27.

- **Adjustment**

Adjust the height screw visually so that the control head is visible 0.3mm below the bottom of the tape.

4-17 HEIGHT ADJUSTMENT OF REVERSE GUIDE

1. Adjust the height from the mechanism chassis to the reverse guide lower flange to 13.38 mm, using the reverse guide height adjustment jig, in tape loading state. (Refer to Figure 4-28 (a) (b).)

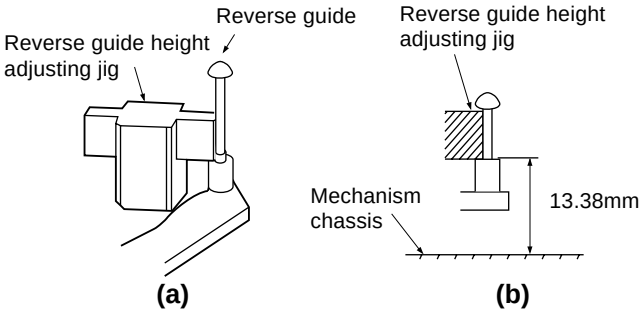


Figure 4-28.

2. Rotate counterclockwise the reverse guide height adjustment nut 1/10 turn. (For height adjustment use the reverse guide height adjustment box driver (JiGDRiVER 11055)).

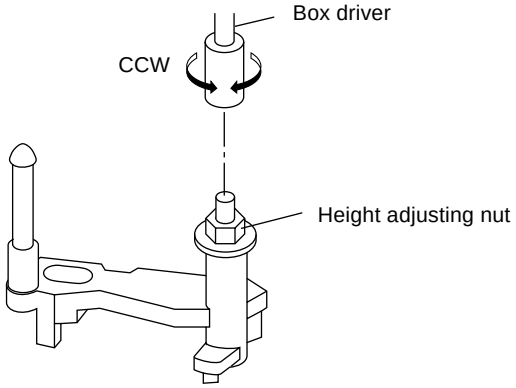
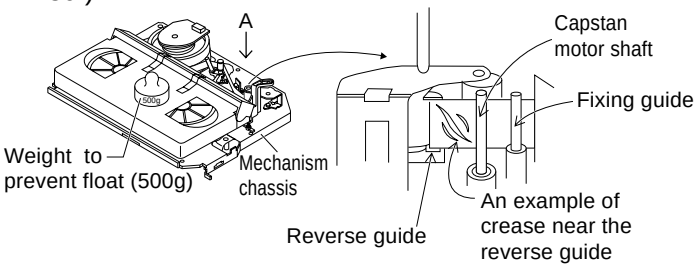


Figure 4-29.

3. Set the tape, and check for tape crease near the reverse guide in the playback mode.
   If crease is found, turn the reverse guide adjustment nut to remove crease. (As for crease check refer to Figure 4-30.)



* Check for crease from the A direction.

Figure 4-30.

4-18 ADJUSTMENT OF TAPE DRIVE TRAIN

1. Tape run rough adjustment
   ① Remove the cassette housing control assembly.
   ② After shortcircuiting between TP803 and TP802 provided at operation PWB, plug in the power cord.
   ③ Check and adjust the position of the tension pole. (See **4-12**.)
   ④ Check and adjust the video search rewind back tension. (See **4-10**.)
   ⑤ Connect the oscilloscope to the test point for PB ATR signal output (TP201). Set the synchronism of the oscilloscope to EXT. The PB ATR signal is to be triggered by the head switching pulse (TP202).
   ⑥ Set the alignment tape (VROATSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

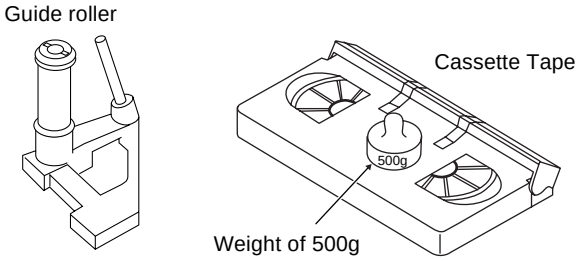


Figure 4-31.

   ⑦ Press the tracking button (+), (–) and change the ATR signal waveform from max to min and from min to max. At this time make sure that the ATR signal waveform changes nearly parallel.
   ⑧ Unless the ATR signal waveform changes nearly parallel, adjust the height of supply side and take-up side guide roller so that the envelope waveform changes nearly parallel. (For ATR signal adjustment procedure refer to Figure 4-35.)
   ⑨ Turn the tilt screw to remove the tape crease at the fixing guide flange.
   Playback the tape and check for tape crease at the fixing guide flange.
   (1) If there is no tape crease
   Turn the tilt screw clockwise so that tape crease appears once at the flange, and then return the tilt screw so that the crease disappears.
   (2) If there is tape crease
   Turn counterclockwise the tilt screw so that the tape crease disappears.
   (Reference) If the tilt screw is turned clockwise crease appears at the lower flange.

Notes:

1. Previously set the tracking control in the center position, and adjust the ATR signal waveform to maximum with X value adjustment nut. Thereby the tape run rough adjustment is facilitated.
2. Especially the outlet side ATR signal waveform must have higher flatness.

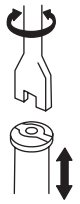


Figure 4-32.

2. Adjustment of A/C head height and azimuth
   ① Perform the initial setting of A/C head position by the method stated in "**4-15** Replacement 3".
   ② Connect the oscilloscope to the audio output terminal.
   ③ Using the alignment tape in which 1 kHz linear audio signal has been recorded, adjust the height screw so as to get max audio output.
   ④ Using the alignment tape in which 7 kHz linear audio signal has been recorded, adjust the azimuth screw so as to get max audio output.
   ⑤ The adjustment of ③ and ④ twice or three times repeat, and finally adjust ④.

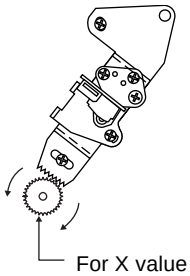
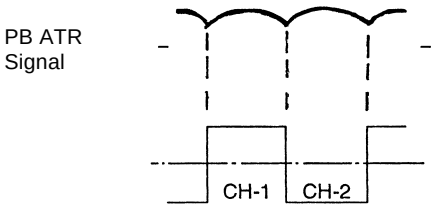


Figure 4-33.

3. Tape run adjustment
   ① Connect the oscilloscope to PB ATR signal output test point, set oscilloscope sync to EXT, trigger-input the PB CHROMA signal (head switching pulse).
   ② Rough adjustment of X value
   Tentatively fix A/C head arm screws ① and ② by the method described in **4-15** "Replacement 3".
   Playback the alignment tape (VROATSV) and shortcircuit between TP801 and TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.
   Move the A/C head with the X value adjustment gear driver (JiGDRiVER-6) by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum ATR signal waveform. (Note: When the A/C head is adjusted, adjust so that the maximum ATR signal waveform is obtained nearest the position of initial setting made in **4-15**.)

③ Next, press the tracking button (+), (–) and change the ATR signal waveform from max to min and from min to max. At this time adjust the height of supply and take-up side guide roller with the adjustment driver (JiGDRiVERH-4) so that the ATR signal waveform changes nearly parallel.
④ If the tape is lifted or sunk from the helical lead surface, the PB ATR signal waveform appears as shown in Figure 4-35.
⑤ Press the tracking button (+), (–) and make sure that the ATR signal waveform changes nearly parallel.
⑥ Finally check tape crease near the reverse guide. If tape crease is found, remove it as stated in **4-17** "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.



Head switching pulse

Figure 4-34.

4. A/C head X value adjustment
① Tentatively fix A/C head arm screws ① and ② by the method described in **4-15** "Replacement 3".
② Playback the alignment tape (VROATSV), and shortcircuit between TP801 and TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.

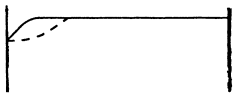
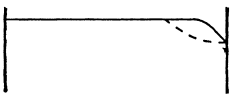
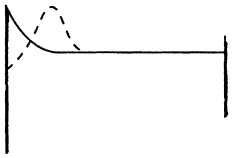
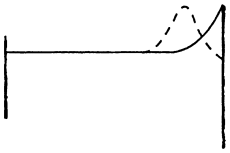
	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
				
				
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten ATR signal.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten ATR signal.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the ATR signal.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the ATR signal.

Figure 4-35.

③ Move the A/C head with the X value adjustment gear driver by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum ATR signal waveform. (Note: At this time adjust so as to get the maximum ATR signal waveform nearest the A/C head position which has been set in case of X value rough adjustment as stated in **4-18**, 3- ②.)
④ Tighten finally the screws ① and ②. Be sure to tighten at first the screw ① and then the screw ②. Final tightening torque is 0.6N·m (If the screw ② is tightened first, the X value may deviate.)
⑤ Adjust the playback switching point (Refer to the electric adjustment method.)
⑥ Playback the self-picture-recorded tape, and check the flatness of ATR signal waveform and sound.

Notes:
When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to **4-18**, 3-②).

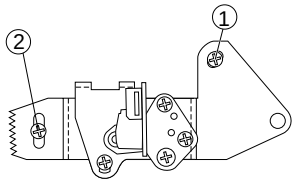


Figure 4-36.

4-19 REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the mechanism from the main PWB (refer to **2-2** item 1 When removing the mechanism from the main PWB).

- **Removal (Follow the order of indicated numbers.)**

1. Remove the reel belt ①.
2. Remove the slow brake lever ②.
3. Remove the three screws ③.

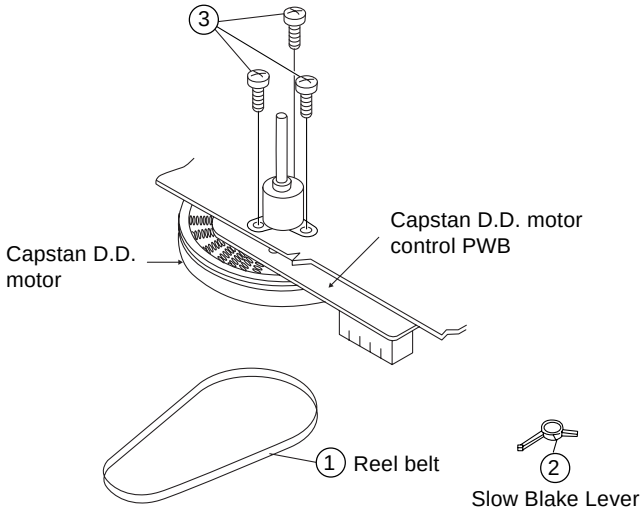


Figure 4-37-1.

- **Reassembly**

1. Taking care so that the capstan shaft does not contact the mechanism chassis, set its position on the mechanism chassis, and then install with the three screws.
2. Install the slow brake lever.
3. Install the reel belt.

Notes:

1. Before installing the capstan D.D. motor, confirm whether an acetate tape (ZTAPEN120020E) is drawn on the back of mechanism chassis.

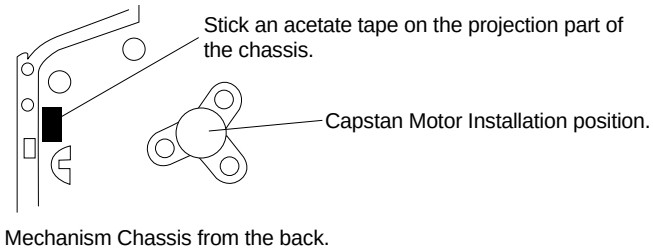

Stick an acetate tape on the projection part of the chassis.
Capstan Motor Installation position.
Mechanism Chassis from the back.

Figure 4-37-2.

2. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
3. Set the tape, and check for the tape crease near the reverse guide in the playback mode. Adjust the A/C head and azimuth as stated in **4-18** item 2. If crease is found, adjust as stated in **4-17** “HEIGHT ADJUSTMENT OF REVERSE GUIDE”.

4-20 REPLACEMENT OF DRUM D.D. MOTOR

1. Set the ejection mode.
2. Withdraw the main power plug from the socket.

- **Removal (Perform in numerical order.)**

1. Disconnect the FFC cable ①.
2. Unscrew the D.D. stator assembly fixing screws ②.
3. Take out the D.D. stator assembly ③.
4. Unscrew the D.D. rotor assembly fixing screws ④.
5. Take out the D.D. rotor assembly ⑤.

Notes:

1. In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Install, so that the D.D. rotor ass'y and upper drum ass'y mounting direction check holes align. (Align the upper drum dent with the rotor hole.)
3. Be careful not to damage the upper drum or the video head.
4. Protect the hole elements from shock due to contact with D.D. stator or D.D. rotor ass'y.
5. After installation adjust the playback switching point for adjustment of servo circuit.

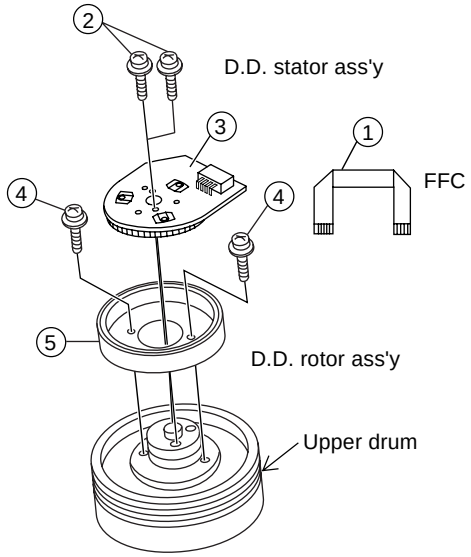


Figure 4-38.

4-21 REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

• Replacement (Perform in the numerical order)
① Remove the motor as stated in **4-20** D.D. motor replacement.
② Remove the drum earth brush ass'y ②.
③ Remove the drum base ③ from the upper and lower drum assembly ①.

[Cares when replacing the drum]

1. Be careful so that the drum earth brush is not lost.
2. Do not touch directly the drum surface.
3. Fit gently the screwdriver to the screws.
4. Since the drum assembly is an extremely precise assembly, it must be handled with utmost care.
5. Make sure that the drum surface is free from dust, dirt and foreign substances.
6. After replacing the drum be sure to perform the tape running adjustment.
   After that, perform also the electrical adjustment.
   • Playback switching point adjustment
   • X-position adjustment and check
   • Standard and x-3 slow tracking adjustment
7. After replacing the drum clean the drum.

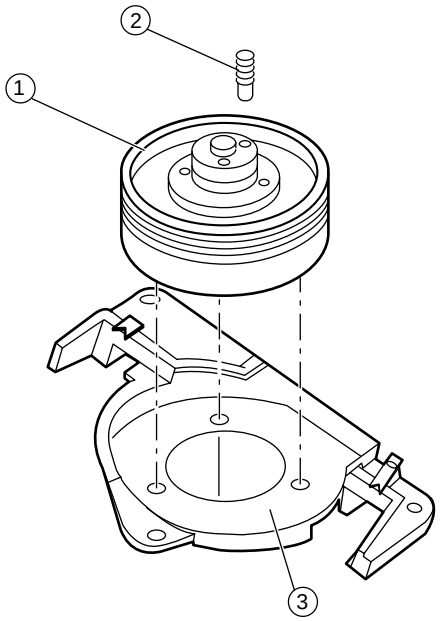


Figure 4-39.

4-22 ASSEMBLING OF PHASE MATCHING MECHANISM COMPONENTS

- **Assemble the phase matching mechanism components in the following order.**

1. Assemble the pinch roller assembly and pinch drive cam.
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Assemble the connection gear, slow brake and loading motor parts.

• PINCH DRIVE CAM AND PINCH ROLLER ASSEMBLING METHOD.

(Place the following parts in position in numerical order.)
(1)Reverse drive lever ①
(2)Reverse guide spring ②
(3)Reverse guide lever ass'y ③
(4)Reverse guide height adjusting nut ④
(5)Pinch drive cam ⑤
(6)Pinch roller ass'y ⑥
(7)Open lever ⑦

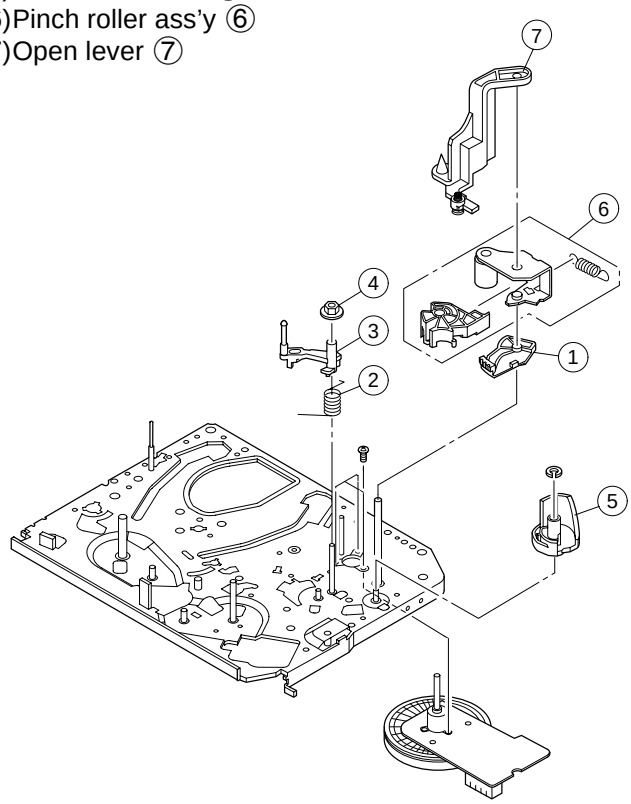


Figure 4-40.

①Insert Reverse Guide Lever Ass'y

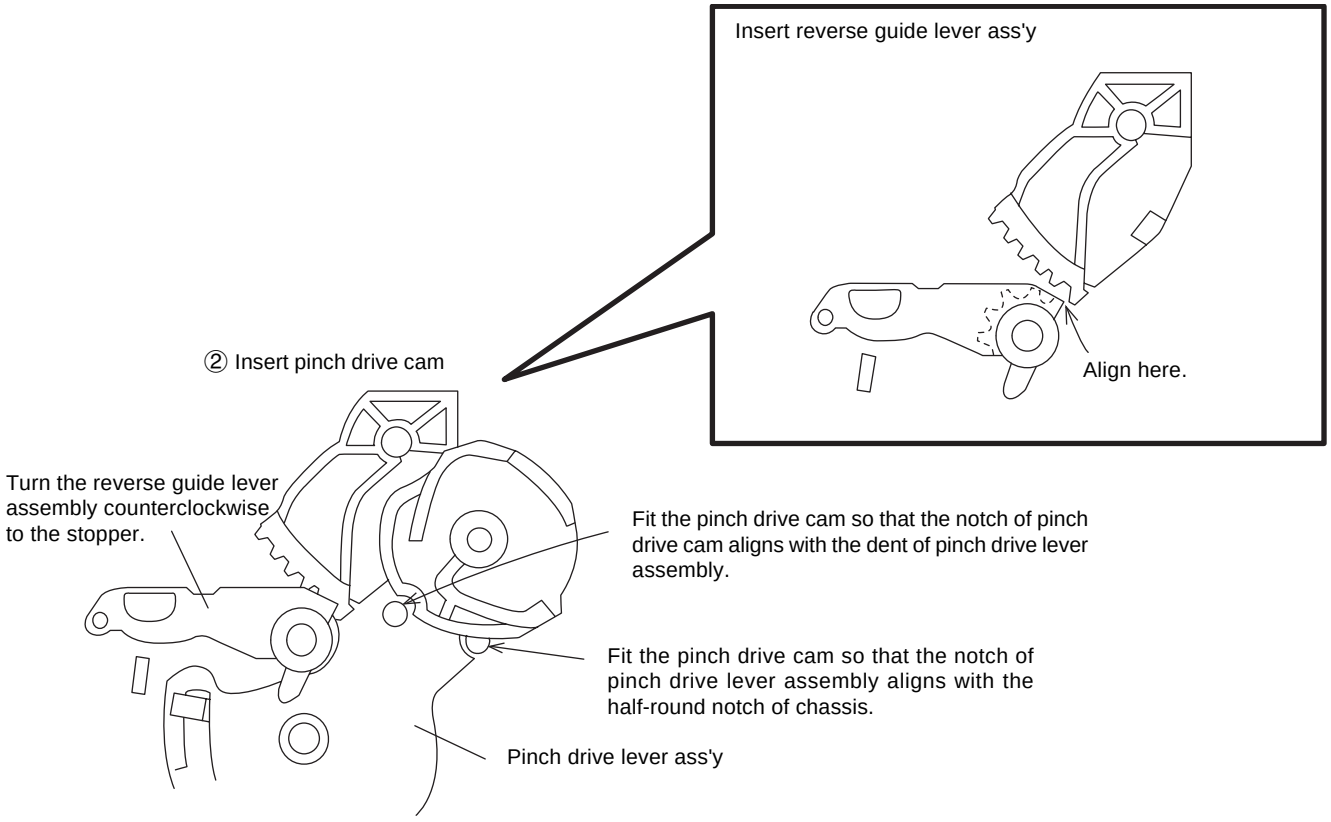

Insert reverse guide lever ass'y
Align here.
② Insert pinch drive cam
Turn the reverse guide lever assembly counterclockwise to the stopper.
Fit the pinch drive cam so that the notch of pinch drive cam aligns with the dent of pinch drive lever assembly.
Fit the pinch drive cam so that the notch of pinch drive lever assembly aligns with the half-round notch of chassis.
Pinch drive lever ass'y

Figure 4-41-1.

②Insert Pinch Roller/Pinch Double Action Lever Ass'y.

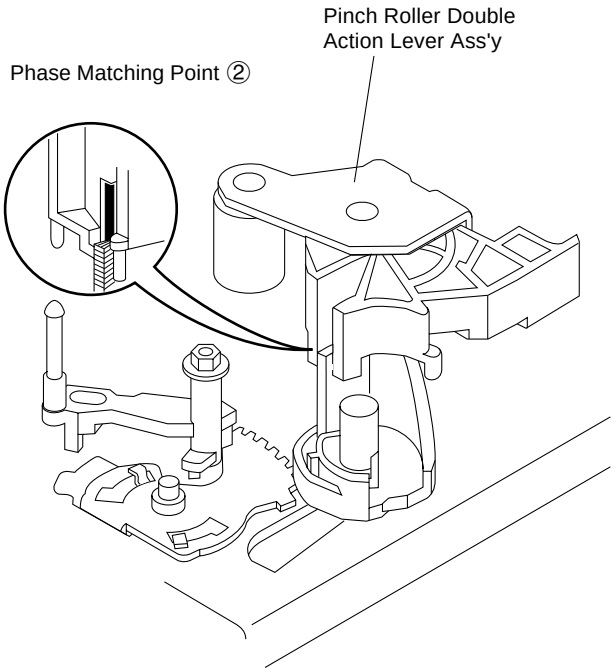


Figure 4-41-2.

③Insert Open Lever.

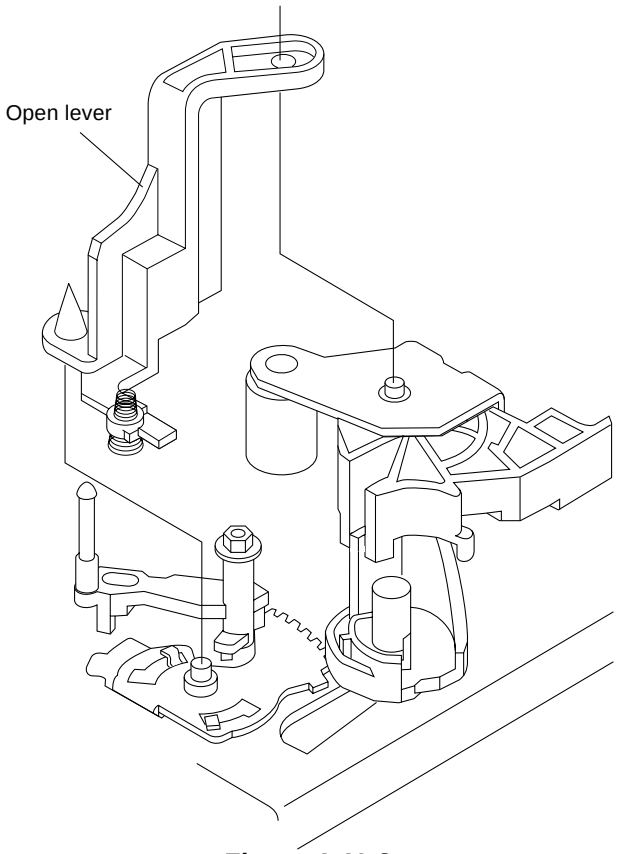
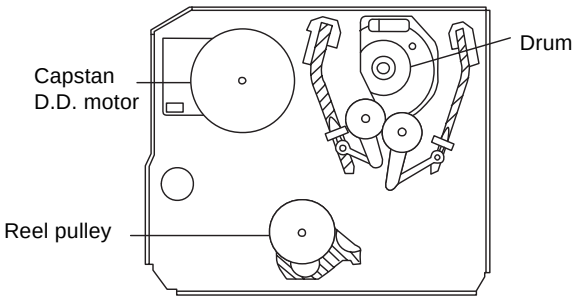


Figure 4-41-3.

4-23 INSTALLING THE SHIFTER



(Bottom side of mechanism chassis)

Figure 4-42.

1. Make sure that the loading gear is at the Phase-Matching point ① as shown below.
2. Install, paying attention to insert point ⑤ and release point ③.
3. For the phase matching at the insert point ①, see the Phase-Matching point ② as shown below.
4. Finally fix the inserts ① and ④.

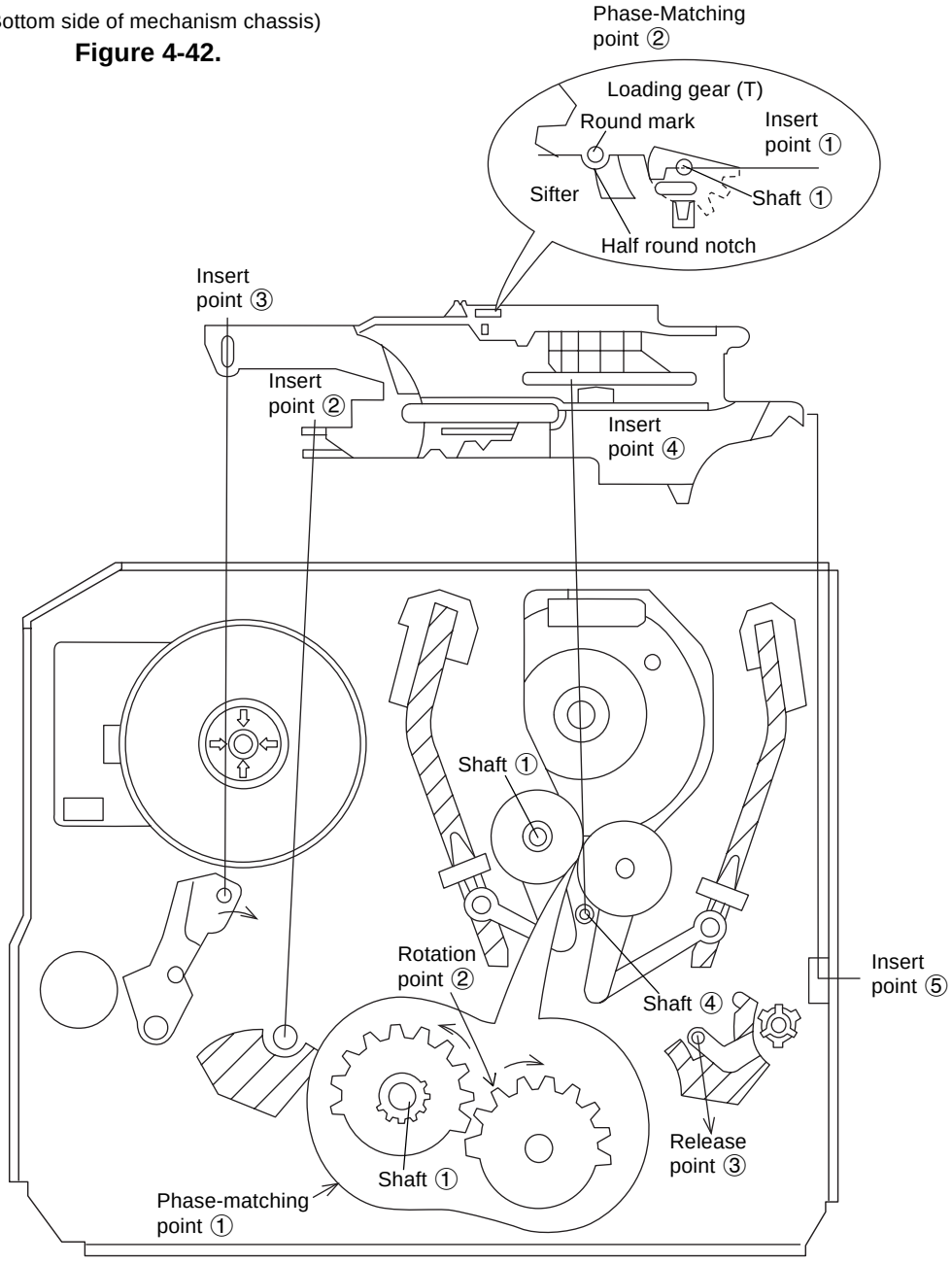


Figure 4-43.

4-24 INSTALLING THE MASTER CAM (AT REAR SIDE OF MECHANISM CHASSIS)

1. Make sure beforehand that the shifter is at the point as shown below.
2. Place the master cam in the position as shown below.

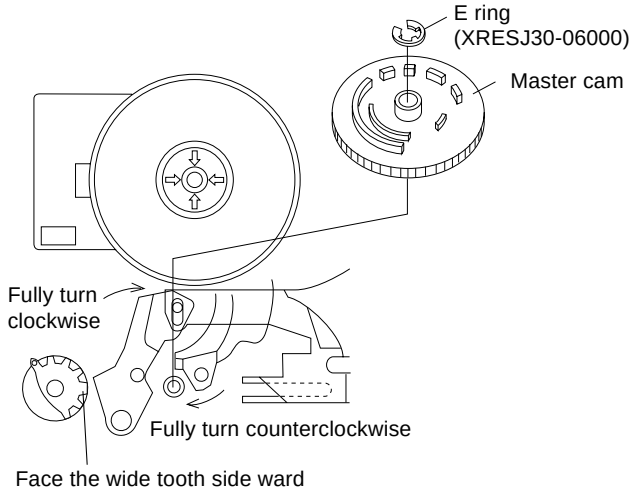


Figure 4-44-1.

Note:
See the figure below for the phase matching between the master cam and the casecon drive gear.

3. Finally fix with the E ring.

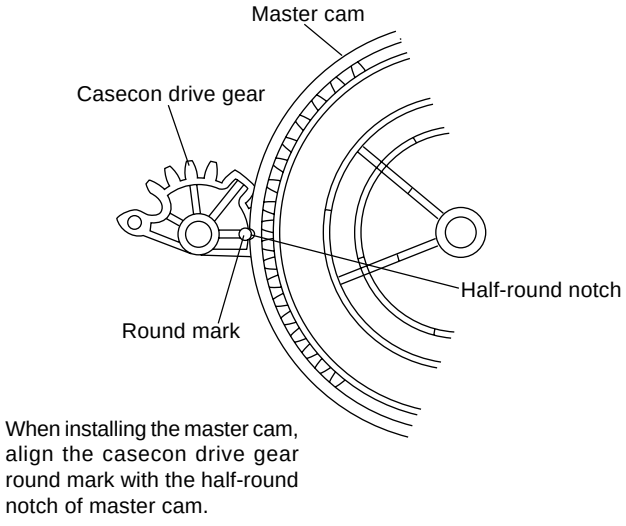

Master cam
Casecon drive gear
Half-round notch
Round mark
When installing the master cam, align the casecon drive gear round mark with the half-round notch of master cam.

Figure 4-44-2.

4-25 REPLACEMENT OF LOADING MOTOR

- **Removal**

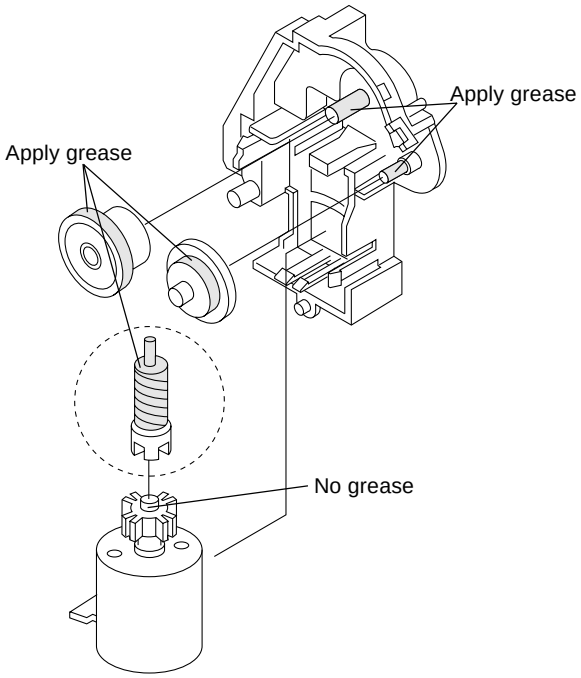


Figure 4-45.

- **Replacement**

Remove the loading motor, and install the replacement loading motor as shown below.

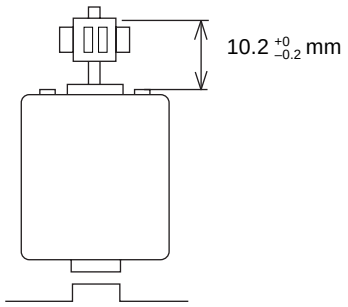


Figure 4-46.

The loading motor pressing-in must be less than 14.7 N (1,500 gf).
Adjust the distance between motor and pulley to 10.2 $^{+0}_{-0.2}$mm).

4-26 ASSEMBLY OF CASSETTE HOUSING

1. Drive Gear and R Drive angle ass'y

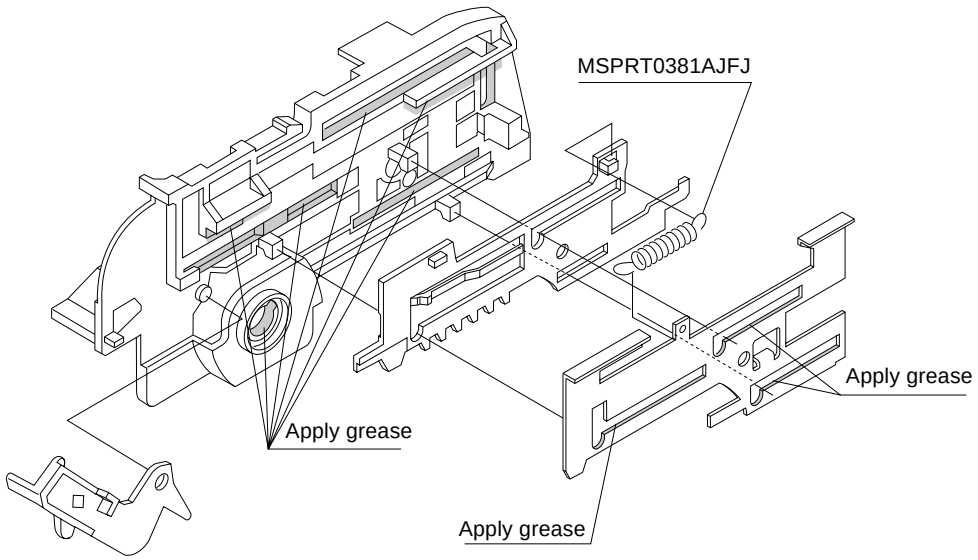


Figure 4-47.

2. Synchro Gear, Drive Gear L and Drive Gear R

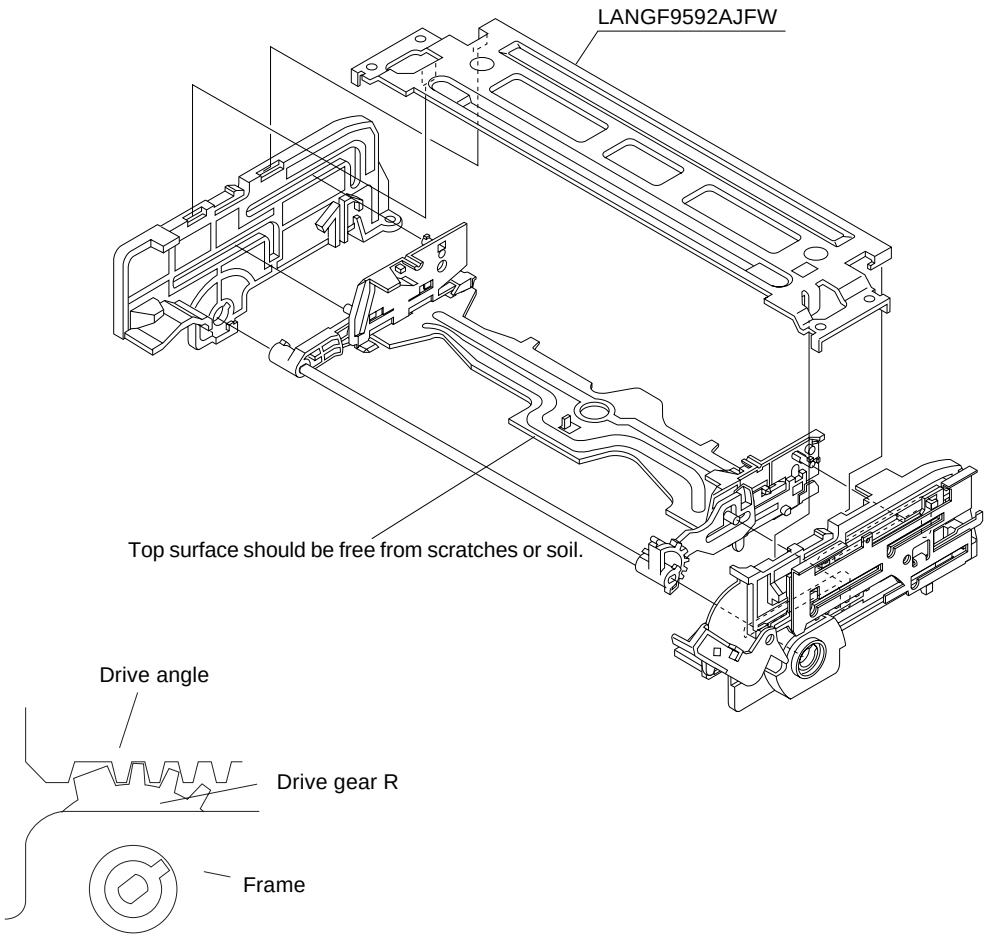


Figure 4-48.

5. ELECTRICAL ADJUSTMENT

Notes:

- **Before the adjustment:**
  Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.
  Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments cannot be completed.

- **Instruments required:**
  - Color TV monitor
  - Audio signal generator
  - Blank video cassette tape
  - Screwdriver for adjustment
  - RF signal generator
  - Dual-trace oscilloscope
  - AC milli-voltmeter
  - Alignment tape (VROEFZHS)
  - Color bar generator

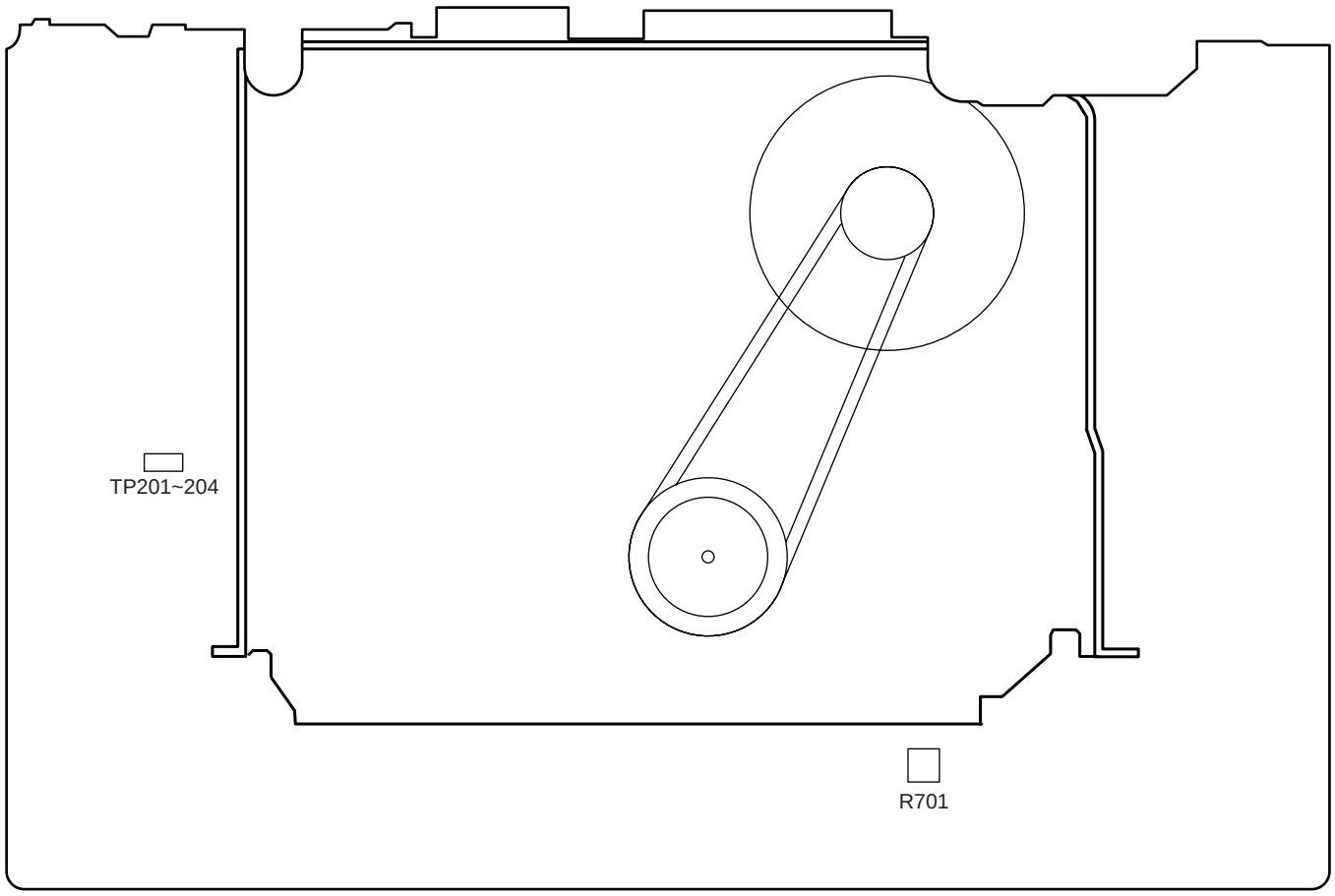


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

5-1 ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROEFZHS)
Test point	VIDEO OUT jack to CH2 TP202 (Sig.)~TP203 (GND) to CH1
Control	R701 Head switching point adjustment control
Specification	6.0 ± 0.5H (lines)

1. Remove the front panel and play the alignment tape.
2. Connect a dual-trace oscilloscope to the VIDEO OUT jack and TP202 (Sig.) and TP203 (GND).
   (Trigger the oscilloscope with the head switching pulse on TP202.)
3. Playback the alignment tape, and then short circuit between TP801 and TP803 on the operation PWB.
4. Adjust R701 so that the leading edge of the head switching pulse is 6.0H (lines) ahead of the vertical sync as shown in Figure 5-2.
5. Cancel the short circuited.

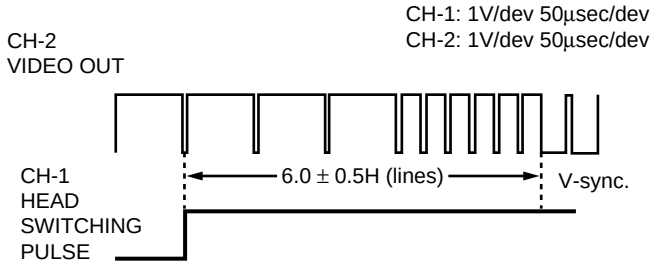


Figure 5-2.

5-2 ADJUSTMENT OF FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Color TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below 2)
Control	Tracking control buttons(+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture is minimized.
4. Play and freeze the self-recorded tape in EP mode and make sure vertical jitter of the picture is not noticeable.

Note:

1 The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.
In this case, preset the FV once again.

2 Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

5-3 CHECKING OF OFF TRACK

Measuring instrument	Color TV monitor
Mode	Playback
Cassette	Self-recorded tape (EP mode) (See Note below)
Control	Tracking control buttons(+) or (–)
Specification	No Poor picture and Hi-Fi sound

1. Play a cassette which was recorded by the unit in EP mode.
2. Short circuit between TP801 and TP803 on the main PWB, and press both CH button (+) and CH button (–) at same time.
3. Press the tracking buttons (+) or (–) 20 times each to bring the tracking off center. Make sure that:
   1) There is nothing unusual on the playback screen.
   2) There is nothing unusual in the Hi-Fi sound (for the Hi-Fi models only).
4. Cancel the short circuit.

Note:

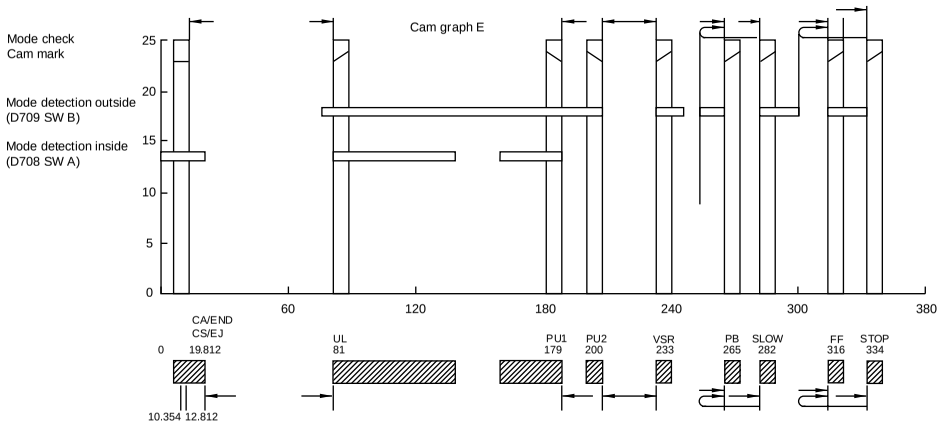
Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

6. MECHANISM OPERATION FLOWCHART AND TROUBLESHOOTING GUIDE

MECHANISM OPERATION FLOWCHART

* This flowchart describes the outline of the mechanism's operation, but does not give its details.

G mechanical timing

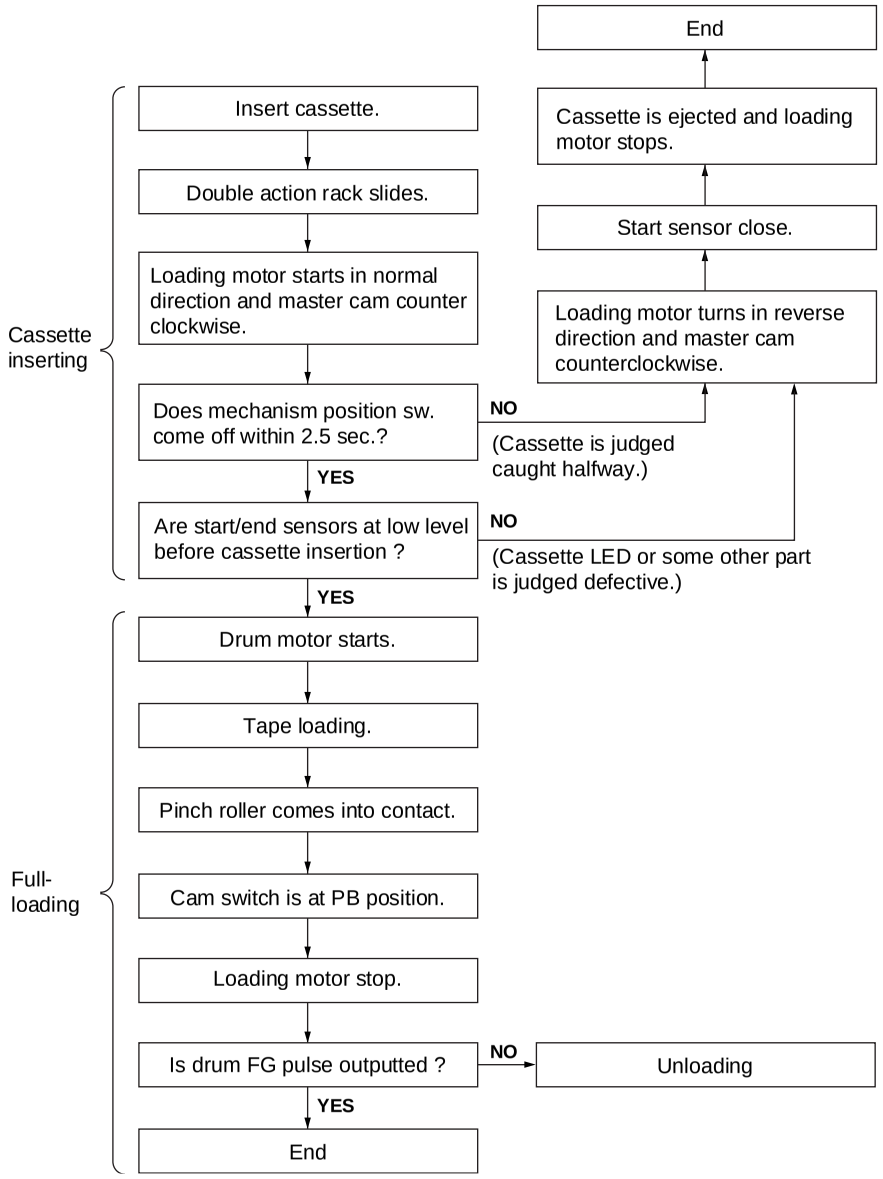


	EJ					UL				PU		PU2		VSR				PB		SLW		FF		STP	
Mode detection outside	0	0		0	0	0	1	1	1		1	1	1	1	0	1	1	0	1	0	0	1	1	0	1	1	0
Mode detection inside	1	1		0	0	0	0	1	1		0		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
S sensor	1	1		0	1	1 or 0																					

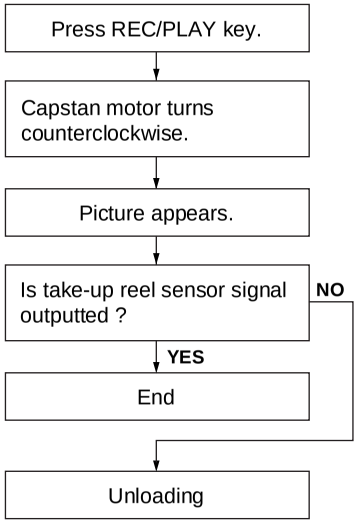
S sensor Open / Close

	Mode detection inside sensor A	Mode detection outside sensor B
CS/EJ	1	0
ULD	1	1
PU1	1	1
PU2	0	1
VSR	0	1
PB	0	0
SLOW	0	1
FF	0	1
STOP	0	0

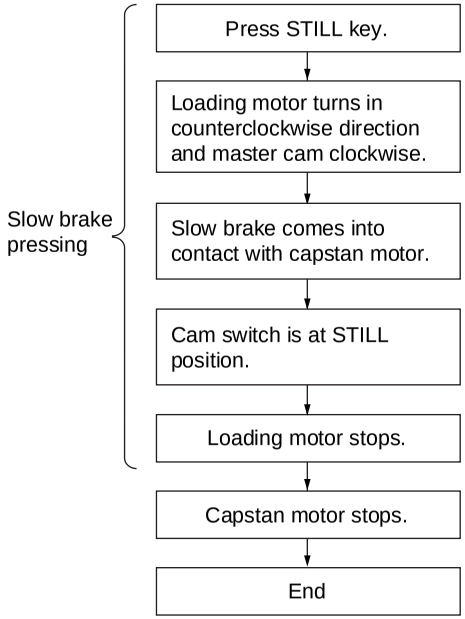
CASSETTE INSERTION → STOP


Cassette inserting
Insert cassette.
Double action rack slides.
Loading motor starts in normal direction and master cam counter clockwise.
Does mechanism position sw. come off within 2.5 sec.?
NO
(Cassette is judged caught halfway.)
YES
Are start/end sensors at low level before cassette insertion ?
NO
(Cassette LED or some other part is judged defective.)
YES
Full-loading
Drum motor starts.
Tape loading.
Pinch roller comes into contact.
Cam switch is at PB position.
Loading motor stop.
Is drum FG pulse outputted ?
NO
Unloading
YES
End
Loading motor turns in reverse direction and master cam counterclockwise.
Start sensor close.
Cassette is ejected and loading motor stops.
End

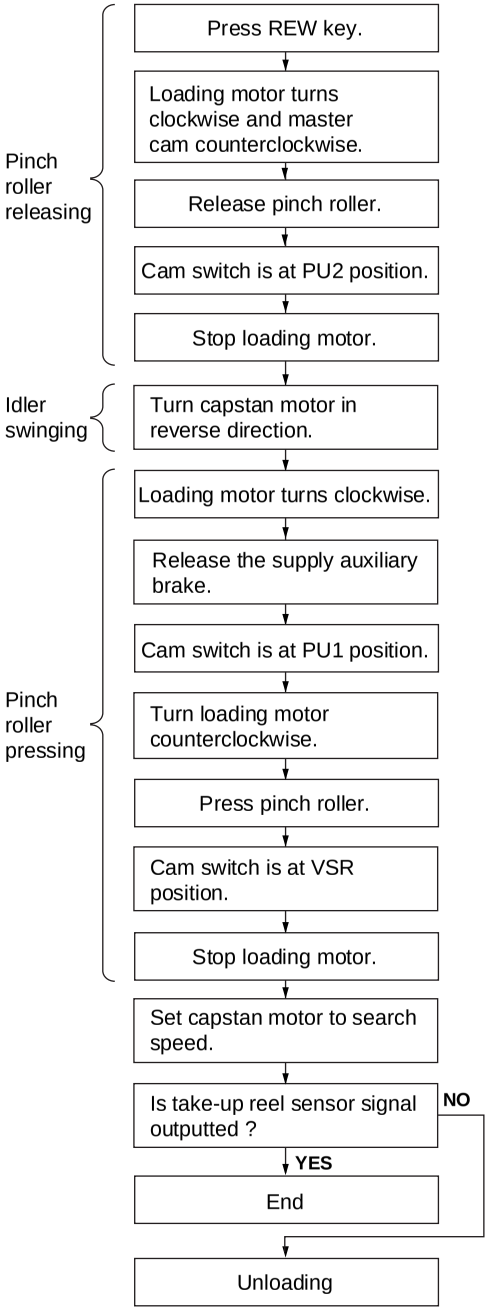
STOP → REC/PLAY



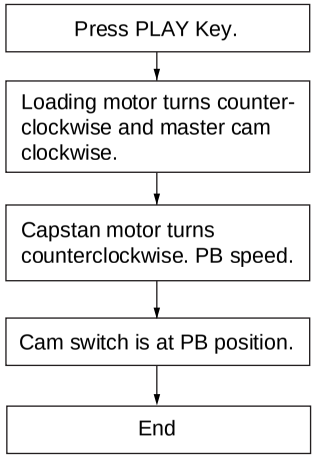
PLAY → STILL


Slow brake pressing
Press STILL key.
Loading motor turns in counterclockwise direction and master cam clockwise.
Slow brake comes into contact with capstan motor.
Cam switch is at STILL position.
Loading motor stops.
Capstan motor stops.
End

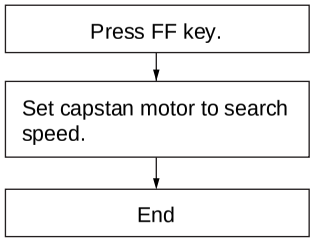
PLAY → VSR



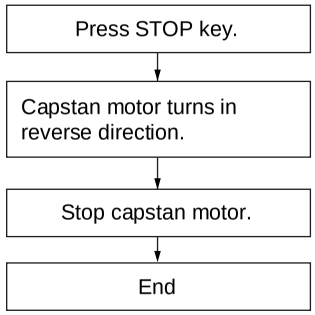
VSR → PLAY


Press PLAY Key.
Loading motor turns counter-clockwise and master cam clockwise.
Capstan motor turns counterclockwise. PB speed.
Cam switch is at PB position.
End

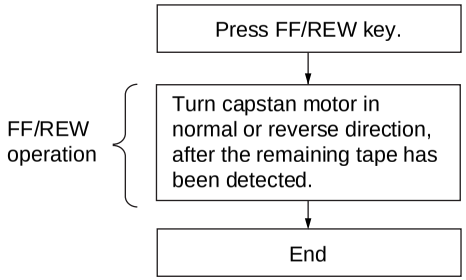
PLAY → VSF



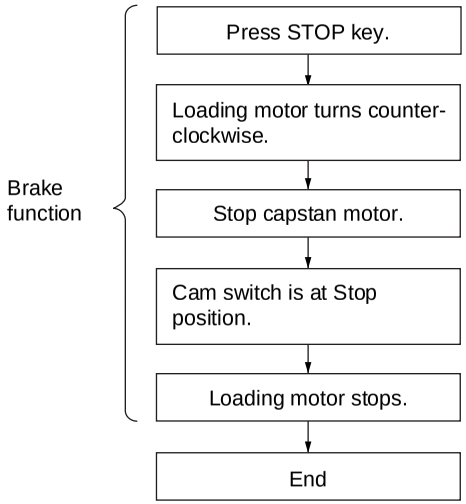
REC/PLAY → STOP



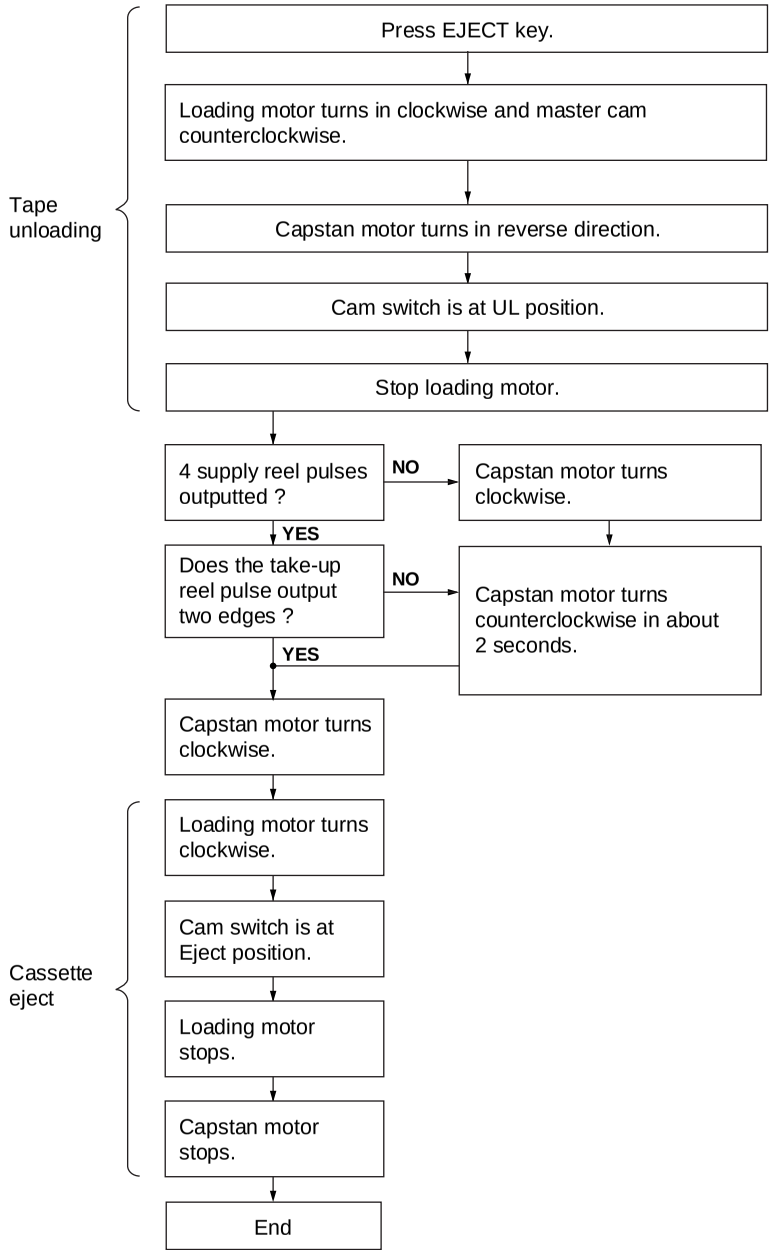
STOP → FF/REW


Press FF/REW key.
FF/REW operation
Turn capstan motor in normal or reverse direction, after the remaining tape has been detected.
End

FF/REW → STOP

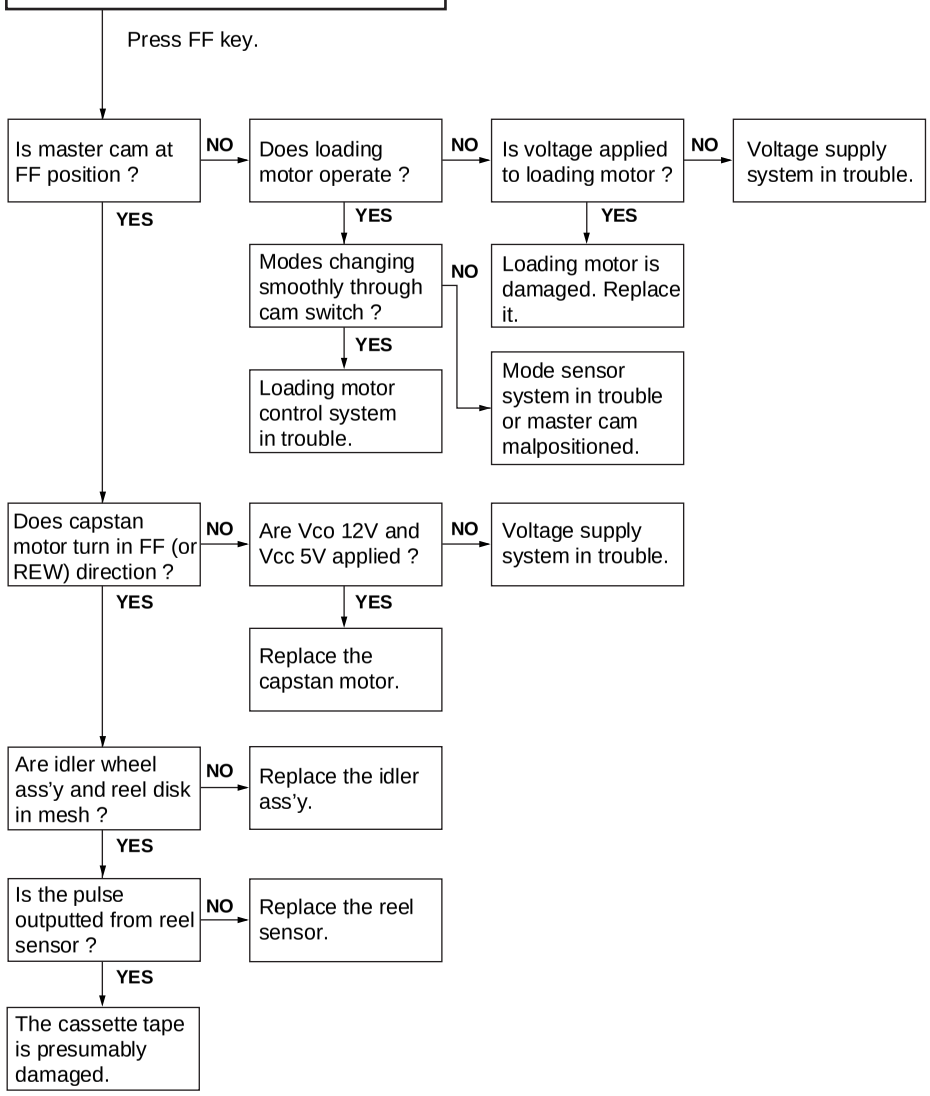


STOP → CASSETTE EJECT

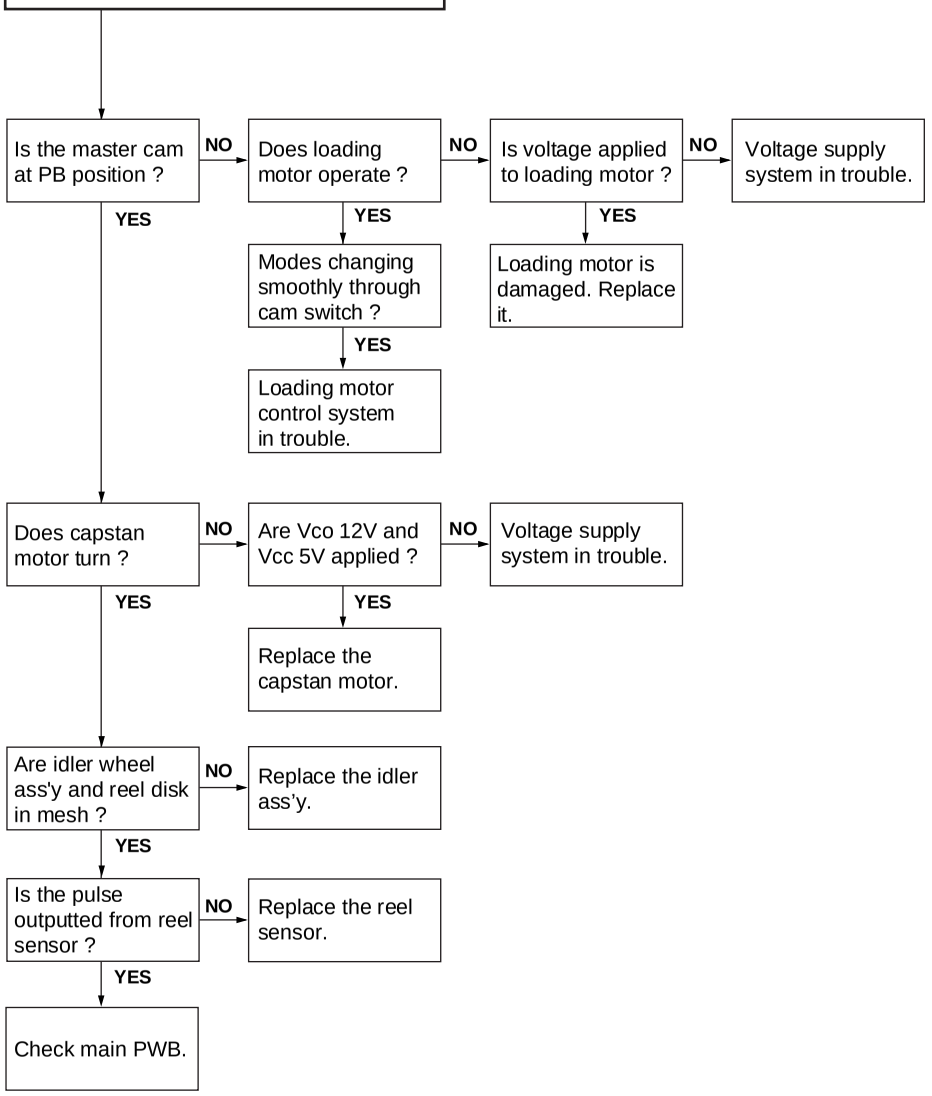

Press EJECT key.
Tape unloading
Loading motor turns in clockwise and master cam counterclockwise.
Capstan motor turns in reverse direction.
Cam switch is at UL position.
Stop loading motor.
4 supply reel pulses outputted ?
NO
Capstan motor turns clockwise.
YES
Does the take-up reel pulse output two edges ?
NO
Capstan motor turns counterclockwise in about 2 seconds.
YES
Capstan motor turns clockwise.
Cassette eject
Loading motor turns clockwise.
Cam switch is at Eject position.
Loading motor stops.
Capstan motor stops.
End

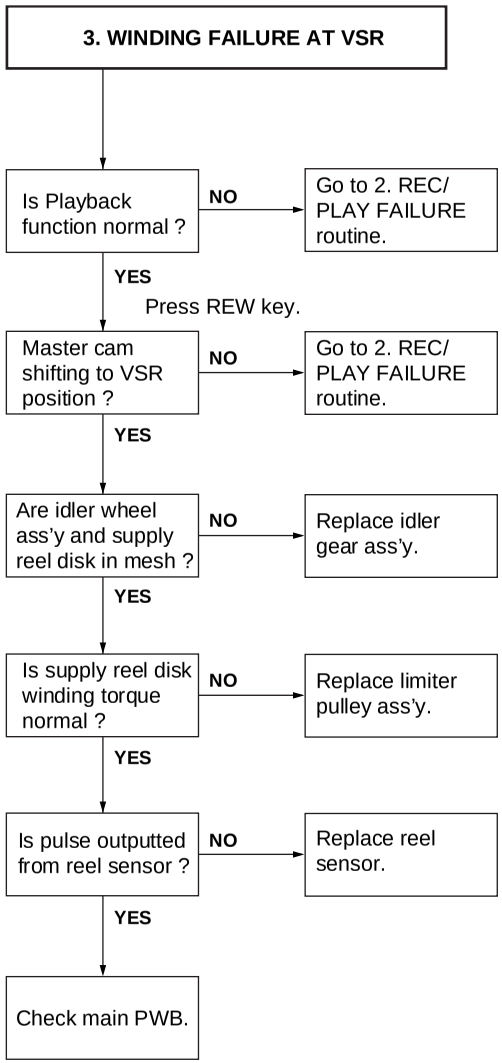
MECHANISM TROUBLESHOOTING

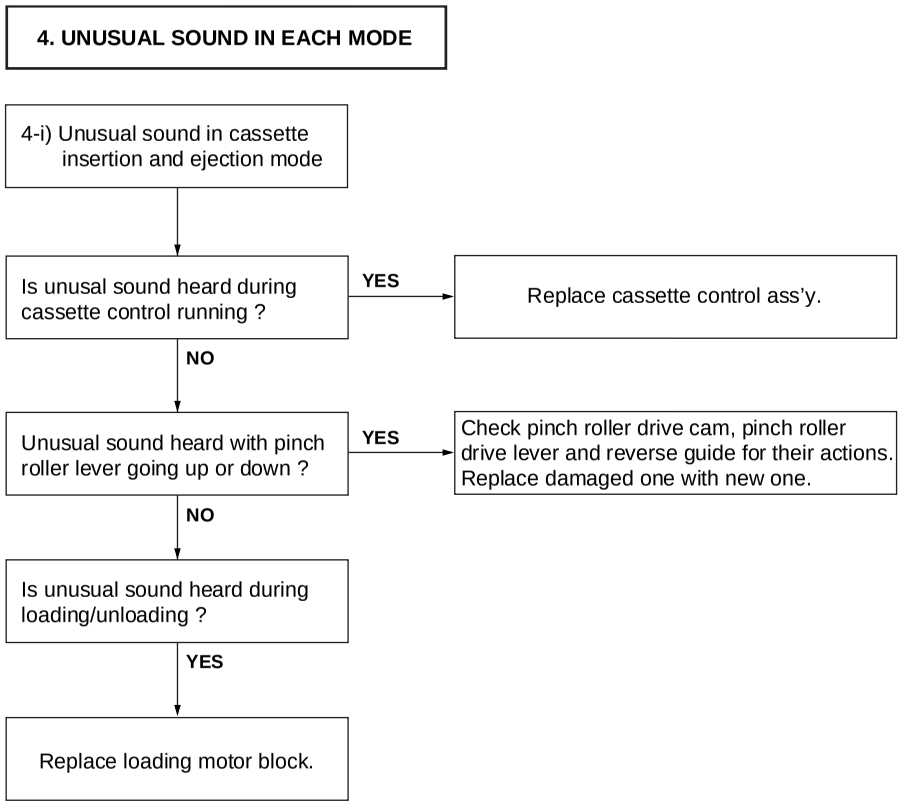
1. FF/REW FAILURE (NO TAPE WINDING)

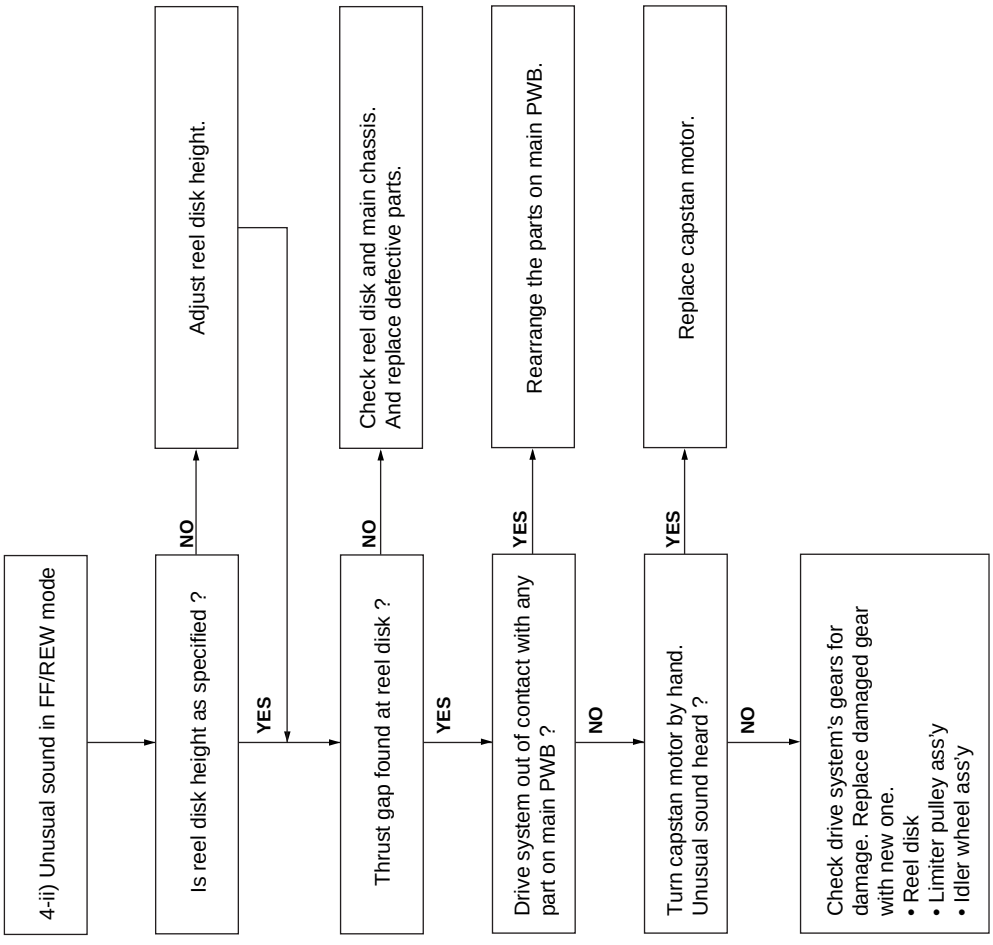


2. REC/PLAY FAILURE (MODE RELEASE)




3. WINDING FAILURE AT VSR
Is Playback function normal ?
NO
Go to 2. REC/ PLAY FAILURE routine.
YES
Press REW key.
Master cam shifting to VSR position ?
NO
Go to 2. REC/ PLAY FAILURE routine.
YES
Are idler wheel ass'y and supply reel disk in mesh ?
NO
Replace idler gear ass'y.
YES
Is supply reel disk winding torque normal ?
NO
Replace limiter pulley ass'y.
YES
Is pulse outputted from reel sensor ?
NO
Replace reel sensor.
YES
Check main PWB.


4. UNUSUAL SOUND IN EACH MODE
4-i) Unusual sound in cassette insertion and ejection mode
Is unusal sound heard during cassette control running ?
YES
Replace cassette control ass'y.
NO
Unusual sound heard with pinch roller lever going up or down ?
YES
Check pinch roller drive cam, pinch roller drive lever and reverse guide for their actions. Replace damaged one with new one.
NO
Is unusual sound heard during loading/unloading ?
YES
Replace loading motor block.


4-ii) Unusual sound in FF/REW mode
Is reel disk height as specified ?
NO
Adjust reel disk height.
YES
Thrust gap found at reel disk ?
NO
Check reel disk and main chassis.
And replace defective parts.
YES
Drive system out of contact with any part on main PWB ?
YES
Rearrange the parts on main PWB.
NO
Turn capstan motor by hand.
Unusual sound heard ?
YES
Replace capstan motor.
NO
Check drive system's gears for damage. Replace damaged gear with new one.
• Reel disk
• Limiter pulley ass'y
• Idler wheel ass'y

7. TROUBLESHOOTING

FLOW CHART NO.1

No power

- Is the fuse good?
  - NO → The fuse blows out even when it is replaced with new one. See **FLOW CHART NO.2** <Fuse blown out.>.
  - YES ↓
- Is the normal state restored when once unplugged power cord is plugged again after several seconds?
  - NO → Check for leak or short-circuiting of primary circuit part. (L901, D901~904, T901, C906, R904, Q901~902, etc.)
  - YES ↓
- Are AT 5V voltage line normal?
  - NO → Check for leak or short-circuiting of primary circuit part. (L901, D901~904, T901, C906, R904, Q901~902, etc.)
  - YES ↓
- Are AT 44V, AT 27V, PC 12V, normal?
  - NO → Check each rectifier circuits and short-circuit of secondary circuit.
  - YES ↓
- Is "H" level applied at pin(95) of IC701?
  - NO → Check the power failure circuit. (Q705)

FLOW CHART NO.2

Fuse blown out.

Case (1)

Check for leak or short-circuiting of primary circuit part. (L901, D901~904, T901, C906, R904, Q901~902, etc.)

Case (2)

Check for short-circuiting of rectifying diode and circuit in each rectifying circuit of secondary circuit. (D921~924)

FLOW CHART NO.3

When the output voltage fluctuates.

- Check whether the secondary side photocoupler circuit operates normally.
  - NO → Check the circuit and replace parts. (IC901, IC903, etc.)
  - YES ↓
- Check whether the primary side photocoupler output control functions normally.
  - NO → Check the circuit and replace parts. (IC901, IC903, Q902, T901, etc.)
  - YES ↓
- Replace IC901.

FLOW CHART NO.4

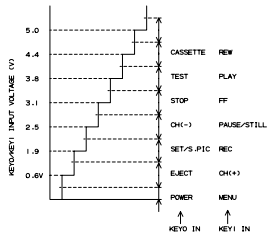
When buzz is heard from the vicinity of power circuit.

Check for short-circuiting of circuit and rectifying diode of each rectifying circuit of secondary circuit and check for failure of shunt regulator circuit. (D921~924, IC903, C932, C933)

FLOW CHART NO.5

Key-in input is not received.

- Does the key switch make good contact, when the cassette tape is inserted?
  - NO → Check switch contact.
  - YES ↓
- Is there the function control voltage inputted at the pins(89) and (88) of IC701?
  - YES ↓



Check or place the peripheral circuit of IC701.

FLOW CHART NO.6

No operation is possible from the infrared remote control.

Operation is possible from the VCR, but no operation is possible from the infrared remote control.

YES

Is the supply voltage of 5V feed to pin(3) terminal of remote control receiver? — **NO** → Check AT 5V lines.

YES

Is "L" pulse sent out pin(1) terminal of receiver when the infrared remote control is activated? — **NO** → Replace the remote control receiver or replace the remote control transmitter if necessary.

YES

Is inputted "L" pulse to pin(4) of IC701? — **NO** → Check line between at remote control receiver thru to pin(4) of IC701.

YES

Replace IC701.

FLOW CHART NO.7

A cassette tape is not take in.

Are start sensor shutter go to open when the cassette tape is inserted? — **NO** → Check start sensor shutter.

YES

Does pin(86) of IC701 change from "H" to "L" level when the cassette tape is inserted? — **NO** → Check line start sensor and all the way up thru to pin(86) of IC701.

YES

Does pin(11) of IC706 go to a "H" (about 4.7V) level when the cassette tape is inserted? — **NO** → Check line pin(91) of IC701 and all the way up thru to pin(11) of IC706.

YES

Does pin(13) of IC706 change to about 10V when the cassette tape is inserted? — **NO** → Check IC706.

YES

Is the specified voltage (about 10V) applied at the loading motor terminal when the cassette tape is inserted? — **NO** → Check between IC706 and loading motor.

YES

Replace loading motor.

FLOW CHART NO.8

A cassette tape is taken in, but ejected at once.

Does the start sensor pulse at pin(86) of IC701 change from "L" to "H" level when the cassette tape is loaded? — **NO** → Check start sensor and all the way up thru to IC701.

YES

Does the end sensor pulse at pin(84) of IC701 change from "L" to "H" level when the cassette tape is loaded? — **NO** → Check end sensor and all the way up thru to IC701.

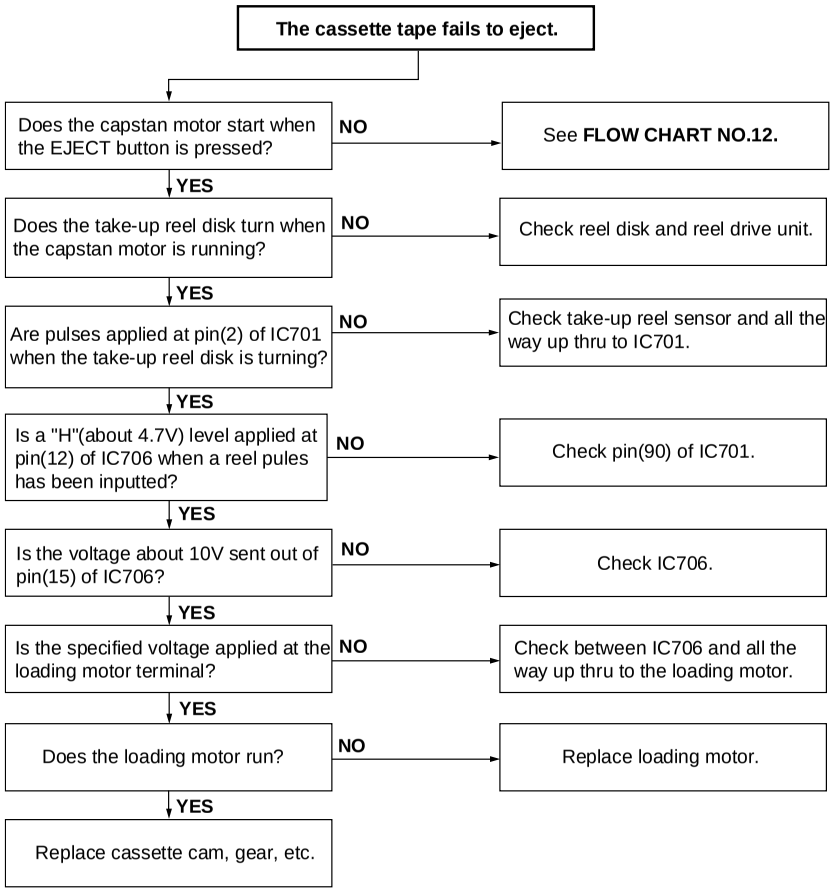
YES

Does the master cam mode shifter operate normally when the cassette tape is loaded? — **NO** → Check cam switch and all the way up thru to IC701.

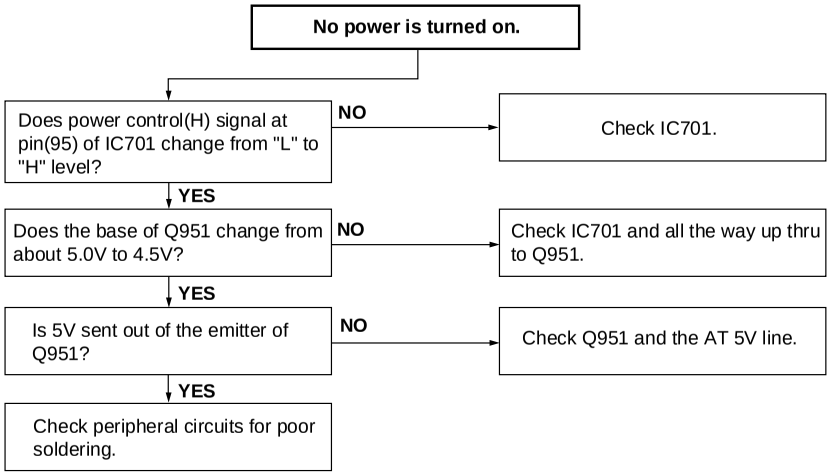
YES

Replace IC701.

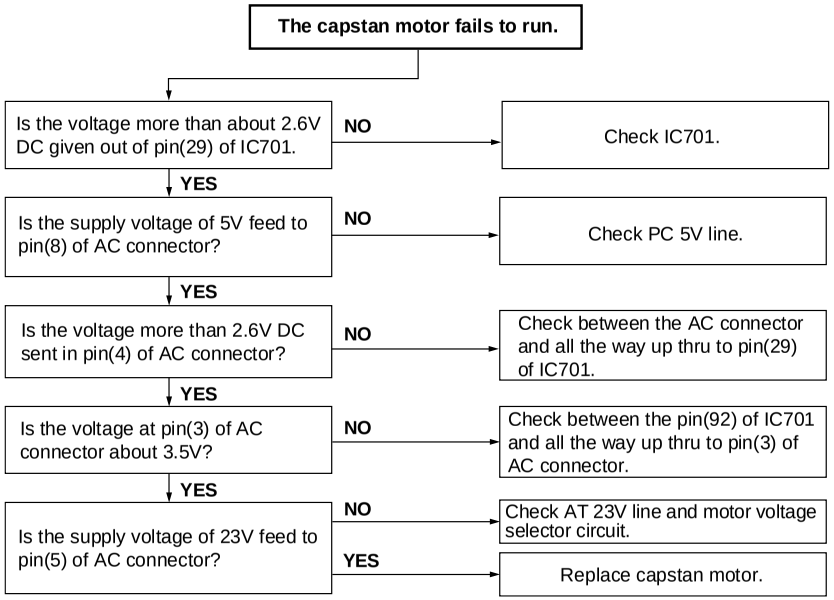
FLOW CHART NO.9


The cassette tape fails to eject.
Does the capstan motor start when the EJECT button is pressed?
NO
See FLOW CHART NO.12.
YES
Does the take-up reel disk turn when the capstan motor is running?
NO
Check reel disk and reel drive unit.
YES
Are pulses applied at pin(2) of IC701 when the take-up reel disk is turning?
NO
Check take-up reel sensor and all the way up thru to IC701.
YES
Is a "H"(about 4.7V) level applied at pin(12) of IC706 when a reel pules has been inputted?
NO
Check pin(90) of IC701.
YES
Is the voltage about 10V sent out of pin(15) of IC706?
NO
Check IC706.
YES
Is the specified voltage applied at the loading motor terminal?
NO
Check between IC706 and all the way up thru to the loading motor.
YES
Does the loading motor run?
NO
Replace loading motor.
YES
Replace cassette cam, gear, etc.

FLOW CHART NO.10


No power is turned on.
Does power control(H) signal at pin(95) of IC701 change from "L" to "H" level?
NO
Check IC701.
YES
Does the base of Q951 change from about 5.0V to 4.5V?
NO
Check IC701 and all the way up thru to Q951.
YES
Is 5V sent out of the emitter of Q951?
NO
Check Q951 and the AT 5V line.
YES
Check peripheral circuits for poor soldering.

FLOW CHART NO.11


The capstan motor fails to run.
Is the voltage more than about 2.6V DC given out of pin(29) of IC701.
NO
Check IC701.
YES
Is the supply voltage of 5V feed to pin(8) of AC connector?
NO
Check PC 5V line.
YES
Is the voltage more than 2.6V DC sent in pin(4) of AC connector?
NO
Check between the AC connector and all the way up thru to pin(29) of IC701.
YES
Is the voltage at pin(3) of AC connector about 3.5V?
NO
Check between the pin(92) of IC701 and all the way up thru to pin(3) of AC connector.
YES
Is the supply voltage of 23V feed to pin(5) of AC connector?
NO
Check AT 23V line and motor voltage selector circuit.
YES
Replace capstan motor.

FLOW CHART NO.12

The drum motor fails to run.

- Is the voltage more than about 2.6V DC given out of pin(46) of IC701.
  - NO → Check IC701.
  - YES ↓
- Is the supply voltage of 5V feed to pin(3) of IC706?
  - NO → Check PC 5V line.
  - YES ↓
- Is the voltage more than about 2.6V applied at pin(2) of IC706?
  - NO → Check between pin(30) of IC701 and all the way up to pin(2) of IC706.
  - YES ↓
- Is the supply voltage of 12V feed to pin(21) of IC706?
  - NO → Check AT 12V line.
  - YES ↓
- Check or replace drum motor.

FLOW CHART NO.13

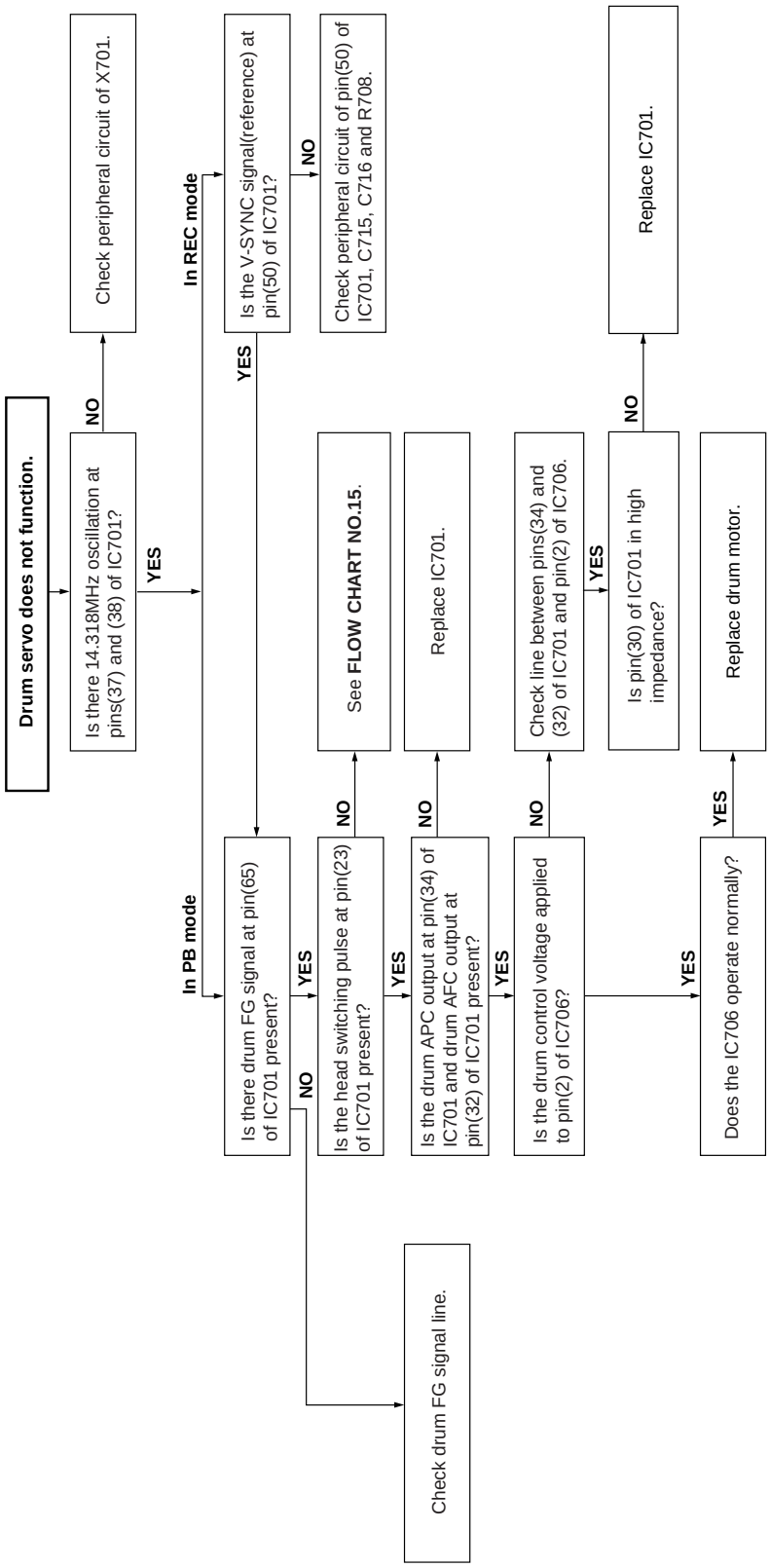
The drum motor runs only for a few seconds.

- Is drum PG signal given out of pin(7) of IC706?
  - NO → Check pin(4), (5), (6) of IC706 and peripheral circuits.
    - NO ↑ Replace IC706.
    - YES ↓ Check or replace drum motor.
  - YES ↓
- Is drum PG signal given out of pin(66) of IC701?
  - NO → Check line between pin(7) of IC706 and all the way up thru to pin(66) of IC701.
  - YES ↓
- Is V-H.SW.P pulse given out of pin(23) of IC701?
  - NO → Check IC701.
  - YES ↓
- Replace IC701.

FLOW CHART NO.14

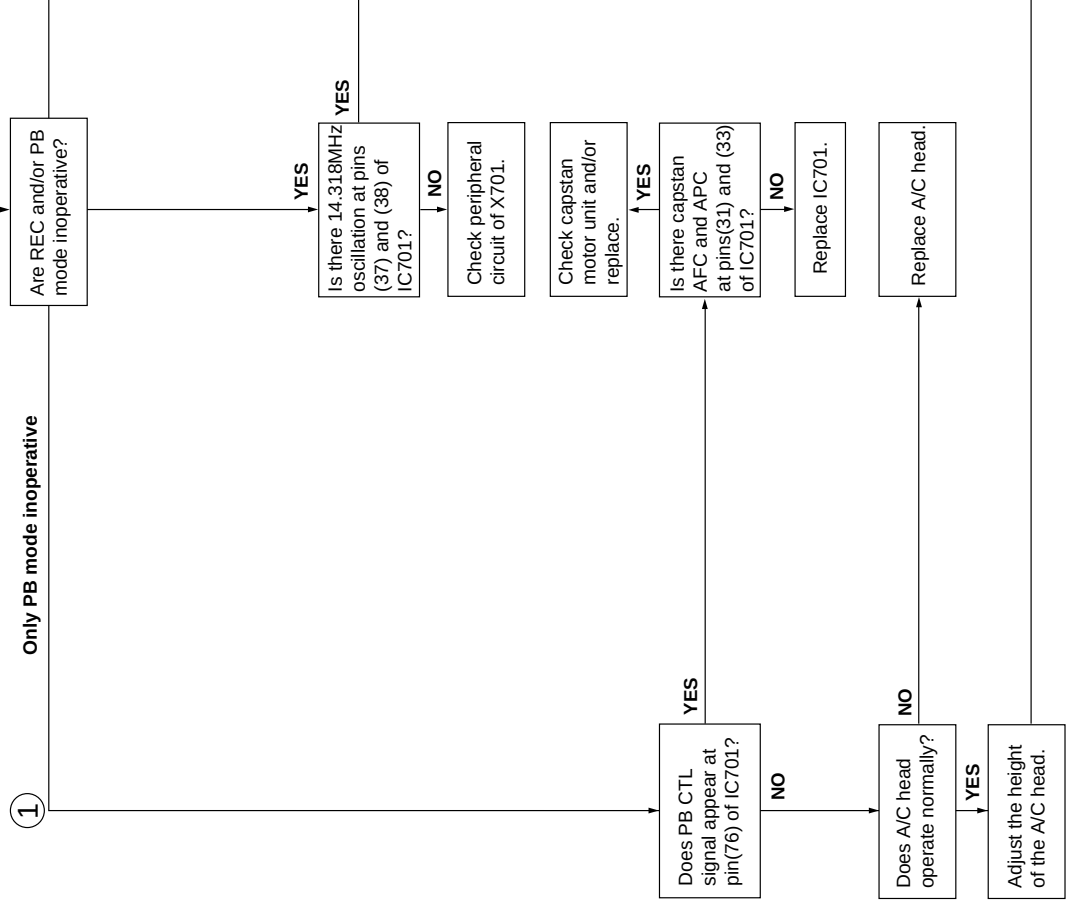
No head switching pulse.

- Is the drum motor rotating?
  - NO → See **FLOW CHART NO.13,14**.
  - YES ↓
- Is the drum PG signal and drum FG signal present on pins(66) and (65) of IC701, respectively?
  - NO → Are there drum PG M.M.signal at pin(87) of IC701?
    - NO → Check C753 and readjust R701. (HEAD SW. POINT control.)
    - YES → Replace IC701.
  - YES ↓
- Are the drum PG and drum FG signals present on pins(7) and (8) of IC706?
  - YES → Could be lines between IC706 and IC701.
  - NO ↓ Check peripheral circuit of IC706.

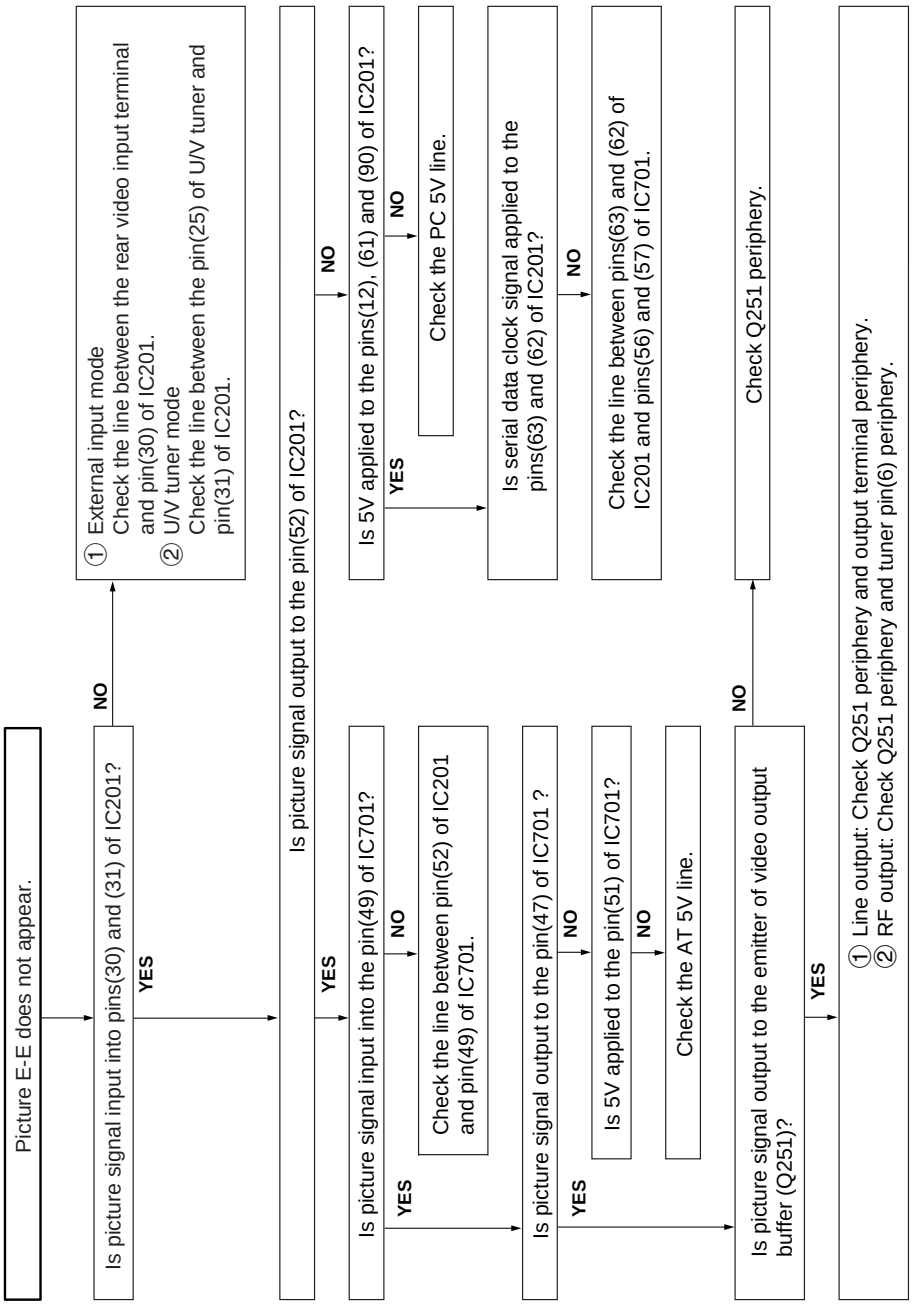

FLOW CHART NO.15
Drum servo does not function.
Is there 14.318MHz oscillation at pins(37) and (38) of IC701?
NO
Check peripheral circuit of X701.
YES
In PB mode
In REC mode
Is there drum FG signal at pin(65) of IC701 present?
YES
NO
Is the V-SYNC signal(reference) at pin(50) of IC701?
YES
NO
Check peripheral circuit of pin(50) of IC701, C715, C716 and R708.
Is the head switching pulse at pin(23) of IC701 present?
YES
NO
See FLOW CHART NO.15.
Is the drum APC output at pin(34) of IC701 and drum AFC output at pin(32) of IC701 present?
YES
NO
Replace IC701.
Is the drum control voltage applied to pin(2) of IC706?
YES
NO
Check line between pins(34) and (32) of IC701 and pin(2) of IC706.
YES
Is pin(30) of IC701 in high impedance?
NO
Replace IC701.
Does the IC706 operate normally?
YES
Replace drum motor.
Check drum FG signal line.

FLOW CHART NO.16

Capstan servo does not function.


Are REC and/or PB mode inoperative?
Only PB mode inoperative
Only REC mode inoperative
①
②
Is the V-SYNC signal(reference) at pin(50) of IC701?
NO
YES
Check peripheral circuit of pin(50) of IC701, C715, C716 and R708.
Is there REC CTL signal output at pins(75) and (74) of IC701?
NO
YES
Replace IC701.
NO
Does PB CTL signal appear at pin (76) of IC701?
Is there 14.318MHz oscillation at pins (37) and (38) of IC701?
YES
NO
Check peripheral circuit of X701.
Does the capstan FG signal appear at pin (67) of IC-701?
YES
NO
Check the capstan FG signal line between pin(6) of AC connector and pin (67) of IC701.
NO
Check peripheral circuit of AC connector.
Is there capstan AFC signal at pin (31) of IC701?
YES
NO
Replace IC701.
Is there capstan APC signal at pin (33) of IC701?
YES
NO
Does pin(29) of IC701 operate normally?
YES
NO
Replace IC701.
Check "①"
NO
Check "②"
Check capstan motor unit and/or replace.
YES
Is there capstan AFC and APC at pins(31) and (33) of IC701?
YES
NO
Replace IC701.
Does PB CTL signal appear at pin(76) of IC701?
YES
NO
Replace A/C head.
Does A/C head operate normally?
NO
YES
Adjust the height of the A/C head.

FLOW CHART NO.17


Picture E-E does not appear.
Is picture signal input into pins(30) and (31) of IC201?
NO
① External input mode
Check the line between the rear video input terminal and pin(30) of IC201.
② U/V tuner mode
Check the line between the pin(25) of U/V tuner and pin(31) of IC201.
YES
Is picture signal output to the pin(52) of IC201?
NO
YES
Is 5V applied to the pins(12), (61) and (90) of IC201?
NO
Check the PC 5V line.
YES
Is picture signal input into the pin(49) of IC701?
NO
Check the line between pin(52) of IC201 and pin(49) of IC701.
YES
Is serial data clock signal applied to the pins(63) and (62) of IC201?
NO
Check the line between pins(63) and (62) of IC201 and pins(56) and (57) of IC701.
YES
Is picture signal output to the pin(47) of IC701 ?
NO
Is 5V applied to the pin(51) of IC701?
NO
Check the AT 5V line.
YES
Is picture signal output to the emitter of video output buffer (Q251)?
NO
Check Q251 periphery.
YES
① Line output: Check Q251 periphery and output terminal periphery.
② RF output: Check Q251 periphery and tuner pin(6) periphery.

FLOW CHART NO.18

Picture (luminance) record is impossible (E-E mode is possible).

Is luminance signal (approx. 0.5 Vp-p) input to the pin(19) of IC201?
- NO → Check between the pins(18) and (19) of IC201. (Check C206.)
- YES ↓

Is luminance signal (approx. 0.3 Vp-p) input to the pin(42) of IC201?
- NO → Check between the pins(21) and (42) of IC201. (Check C208.)
- YES ↓

Is luminance signal (approx. 0.5 Vp-p) input to the pin(26) of IC201?
- NO → Check between the pins(39) and (26) of IC201. (Check C212.)
- YES ↓

Is luminance signal (approx. 0.5 Vp-p) input to the pin(39) of IC201?
- YES ↓
- NO ↓

Is voltage 5V applied to the CCD section power terminal pin(36) of IC201?
- YES ↓

Is CCD control voltage approx. 5V applied normally to the pin(37) from the pin(57) of IC201? Is clock signal (approx. 7.16 MHz/0.5 Vp-p) for CCD applied normally to the pin(44) from the pin(69) of IC201?

Is luminance signal (approx. 0.5 Vp-p) input to the pin(23) of IC201?
- NO → Check between the pins(24) and (23) of IC201. (Check C210.)
- YES ↓

Is the luminance signal (approx. 0.5 Vp-p) input and output to the pins(13) and (14) of IC201, respectively?
- NO → Check the pins(13) and (14) of IC201 peripheral circuit. (R201, R202, C203)
- YES ↓

FLOW CHART NO.19

Although picture record is possible, color does not appear (E-E mode is possible).

Is voltage 5V applied to the chroma power terminal pin(61) of IC201?
- NO → Check the periphery of pin(61) of IC201 and PC 5V line.
- YES ↓

Is chroma signal (approx. 143 mVp-p/Burst) input into the pin(46) of IC201?
- NO → Check between the pins(60) and (46) of IC201. (Check C512.)
  - YES ↓
  - Check whether the pins(71) and (73) of IC201 oscillate (3.58 MHz)?
- YES ↓

Is chroma signal (approx. 180 mVp-p/Burst) input into the pin(58) of IC201?
- NO → Check between the pins(58) and (35) of IC201. (Check R505, C512.)
  - YES ↓
  - Is chroma signal (approx. 180 mVp-p/Burst) output to the pin(35) of IC201?
    - NO → Is voltage 5V applied to the CCD section power terminal pin(36) of IC201?
- YES ↓

SP mode: Is record FM signal (approx. 20 mAp-p) output to the pins(88) and (89) (SP1) and pins(86) and (87) (SP2) of IC201?
EP mode: Is record FM signal (approx. 20 mAp-p) output to the IC201 pins(93) and (94) (EP1) and pins(92) and (91) (EP2) of IC201?

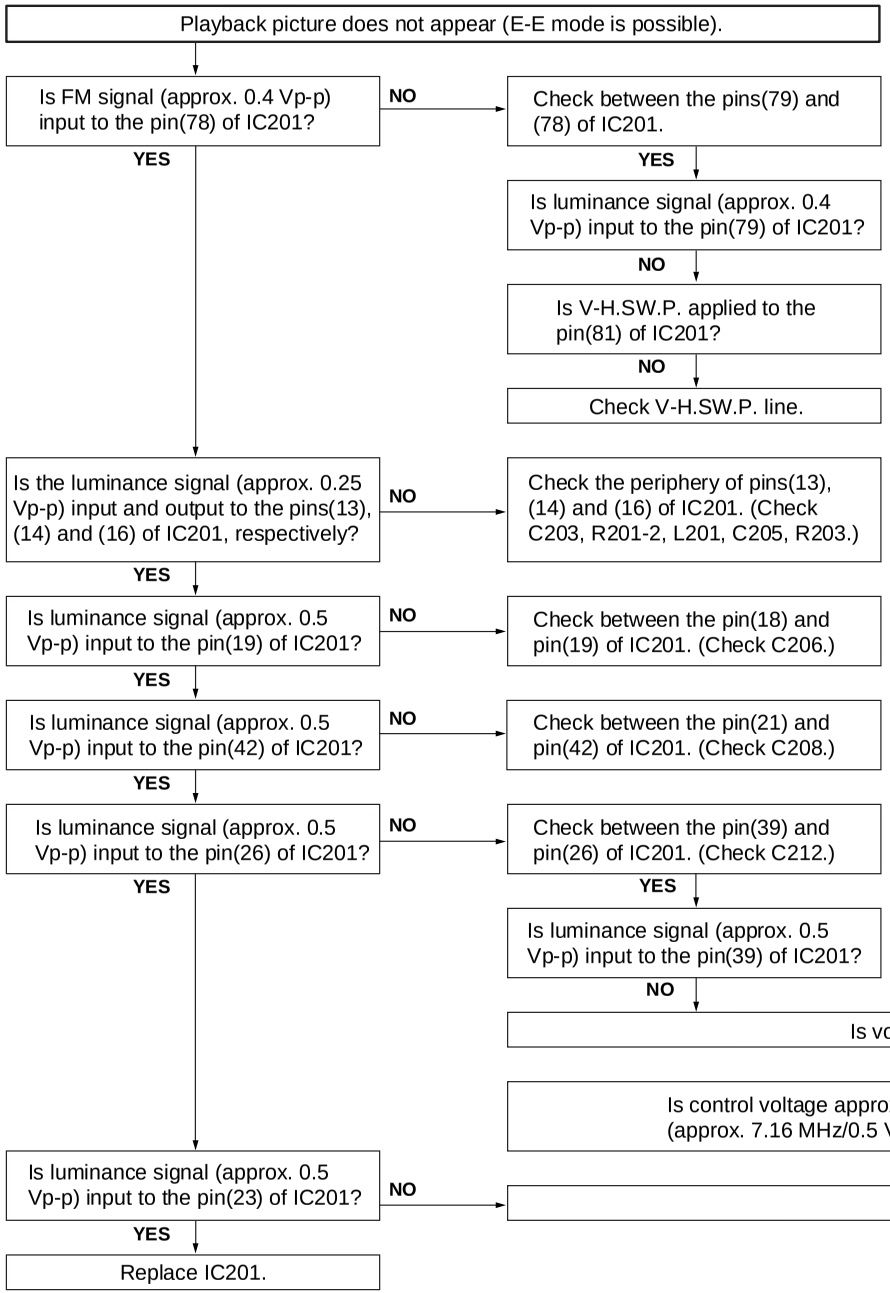
- YES ↓

Check or replace the cylinder.

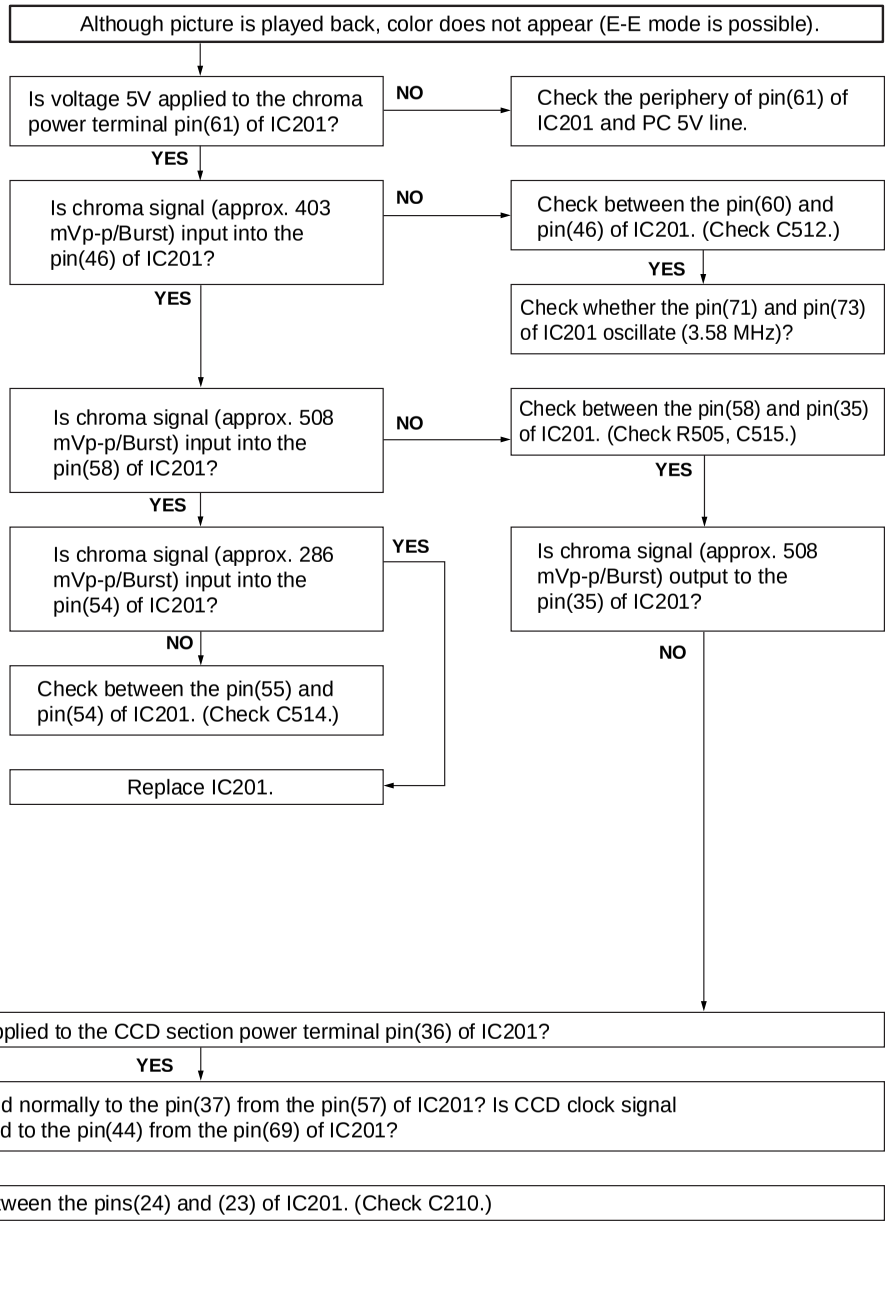
- NO ↓

Is PRE/REC Vcc 5V applied to the pin(90) of IC201?

FLOW CHART NO.20


Playback picture does not appear (E-E mode is possible).
Is FM signal (approx. 0.4 Vp-p) input to the pin(78) of IC201?
NO
Check between the pins(79) and (78) of IC201.
YES
Is luminance signal (approx. 0.4 Vp-p) input to the pin(79) of IC201?
NO
Is V-H.SW.P. applied to the pin(81) of IC201?
NO
Check V-H.SW.P. line.
YES
Is the luminance signal (approx. 0.25 Vp-p) input and output to the pins(13), (14) and (16) of IC201, respectively?
NO
Check the periphery of pins(13), (14) and (16) of IC201. (Check C203, R201-2, L201, C205, R203.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(19) of IC201?
NO
Check between the pin(18) and pin(19) of IC201. (Check C206.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(42) of IC201?
NO
Check between the pin(21) and pin(42) of IC201. (Check C208.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(26) of IC201?
NO
Check between the pin(39) and pin(26) of IC201. (Check C212.)
YES
Is luminance signal (approx. 0.5 Vp-p) input to the pin(39) of IC201?
NO
Is luminance signal (approx. 0.5 Vp-p) input to the pin(23) of IC201?
NO
Check between the pins(24) and (23) of IC201. (Check C210.)
YES
Replace IC201.

FLOW CHART NO.21


Although picture is played back, color does not appear (E-E mode is possible).
Is voltage 5V applied to the chroma power terminal pin(61) of IC201?
NO
Check the periphery of pin(61) of IC201 and PC 5V line.
YES
Is chroma signal (approx. 403 mVp-p/Burst) input into the pin(46) of IC201?
NO
Check between the pin(60) and pin(46) of IC201. (Check C512.)
YES
Check whether the pin(71) and pin(73) of IC201 oscillate (3.58 MHz)?
Is chroma signal (approx. 508 mVp-p/Burst) input into the pin(58) of IC201?
NO
Check between the pin(58) and pin(35) of IC201. (Check R505, C515.)
YES
Is chroma signal (approx. 286 mVp-p/Burst) input into the pin(54) of IC201?
YES
Is chroma signal (approx. 508 mVp-p/Burst) output to the pin(35) of IC201?
NO
Check between the pin(55) and pin(54) of IC201. (Check C514.)
Replace IC201.
Is voltage 5V applied to the CCD section power terminal pin(36) of IC201?
YES
Is control voltage approx. 5V applied normally to the pin(37) from the pin(57) of IC201? Is CCD clock signal (approx. 7.16 MHz/0.5 Vp-p) applied to the pin(44) from the pin(69) of IC201?

FLOW CHART NO.22

No Hi-Fi E-E sound heard.

Is there signal inputted at each terminal of IC651 as shown in table?

	L-ch	R-ch	
Front input terminal	pin(15)	pin(10)	NO → Check the peripheral circuit of front input terminal.
Rear input terminal	pin(14)	pin(9)	NO → Check the peripheral circuit of rear input terminal.
Tuner audio terminal	pin(48)		NO → Is there SIF signal from pin(24) of Tuner?

YES

Is the voltage 5V applied to pin(40) of IC651, 9V applied to pin(58).
NO → Check the regulator circuit of Hi-Fi 5V and PC 9V.

YES

Are serial data and clock signal at pins(43), (42) of IC651?
NO → Check line between pins(43), (42) of IC651 and pins(17), (18) of IC701.

YES

Is "L" level applied at pin(36) of IC651?
NO → Check line between pin(36) of IC651 and pin(22) of IC701.

YES

Is "H" level applied at pin(45) of IC651?
NO → Is Sub carrier signal (3.58MHz, about 900mVp-p) input to pin(45) of IC651?
NO → Check line between X501 and pin(45) of IC651.

YES

Line output terminal : Is there audio signal outputted at pins(53) and (57) of IC651?
RF output terminal : Is there audio signal outputted at pin(59) of IC651?

YES
NO → Replace IC651.

Line output terminal : Check line ranging from pins(53) and (57) of IC651 to the audio output terminal.
RF output terminal : Check line ranging from pin(59) of IC651 to pin(2) of tuner (TU101).

FLOW CHART NO.23

Hi-Fi sound cannot be recorded (E-E mode is normal).

Is terminal voltage (REC AGC. ADJ.) pin(37) of IC651 normal?
NO → Replace IC651.

YES

Is record FM signal output to the pins(21) to (24) (ch-1)/pins(21) and (22) (ch-2) of IC651?
NO → Is the pin(29) of IC651 about 3.7V?
NO → Check Hi-Fi REC CTL line.

YES

Check the AH-MZ connector.

FLOW CHART NO.24

Hi-Fi sound cannot be played back (E-E mode is normal).

Is playback envelope signal output to the pins(29) and (30) of IC651? (300 mVp-p)
NO → Is voltage 5V applied to pin(25) of IC651.
NO → Check line of Hi-Fi 5V.

YES

Replace IC651.

FLOW CHART NO.25

Recording in linear audio is impossible (Hi-Fi E-E mode is normal).

Is audio signal input into the IC201 pin(8)?
NO → Replace IC651.

YES

Is the pin(99) of IC201 in "L" level?
NO → Is A-H.SW.P input into the pin(27) of IC651?
NO → Check the A-H.SW.P. line from the pin(27) of IC651 to the pin(28) of IC701.

YES

Does the bias oscillation circuit operate normally?
NO → Check the line between the pin(61) of IC651 to the pin(8) of IC201.

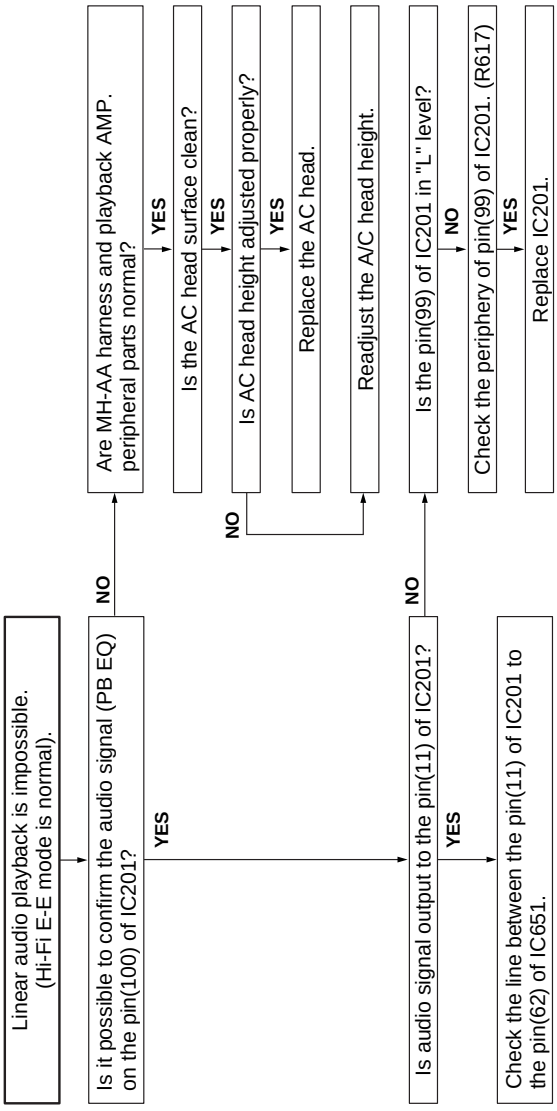
YES

Is audio signal on which bias signal is superposed output to the pin(4) of IC201?
NO → Check the periphery of pin(99) of IC201. (R617)

YES

Check the AA-MH harness and A/C head.
NO → Check the bias oscillation circuit (T601, Q602, Q603).

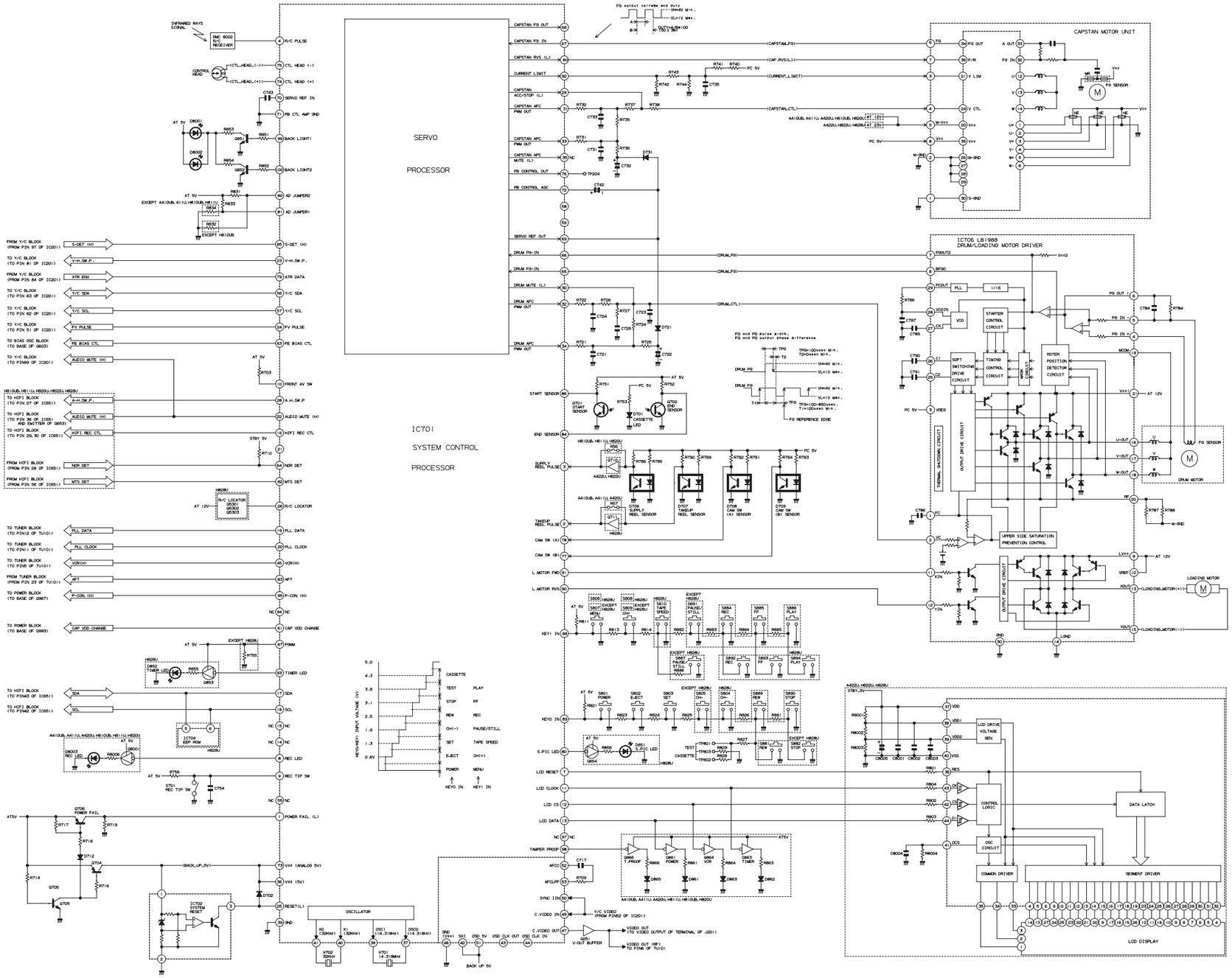
FLOW CHART NO.26


Linear audio playback is impossible. (Hi-Fi E-E mode is normal).
Is it possible to confirm the audio signal (PB EQ) on the pin(100) of IC201?
NO
Are MH-AA harness and playback AMP. peripheral parts normal?
YES
Is the AC head surface clean?
YES
Is AC head height adjusted properly?
YES
Replace the AC head.
NO
Readjust the A/C head height.
YES
Is audio signal output to the pin(11) of IC201?
NO
Is the pin(99) of IC201 in "L" level?
NO
Check the periphery of pin(99) of IC201. (R617)
YES
Replace IC201.
YES
Check the line between the pin(11) of IC201 to the pin(62) of IC651.

VC-A410U(B)/H810U(B)
VC-A411U/H811U
VC-A420U/H820U

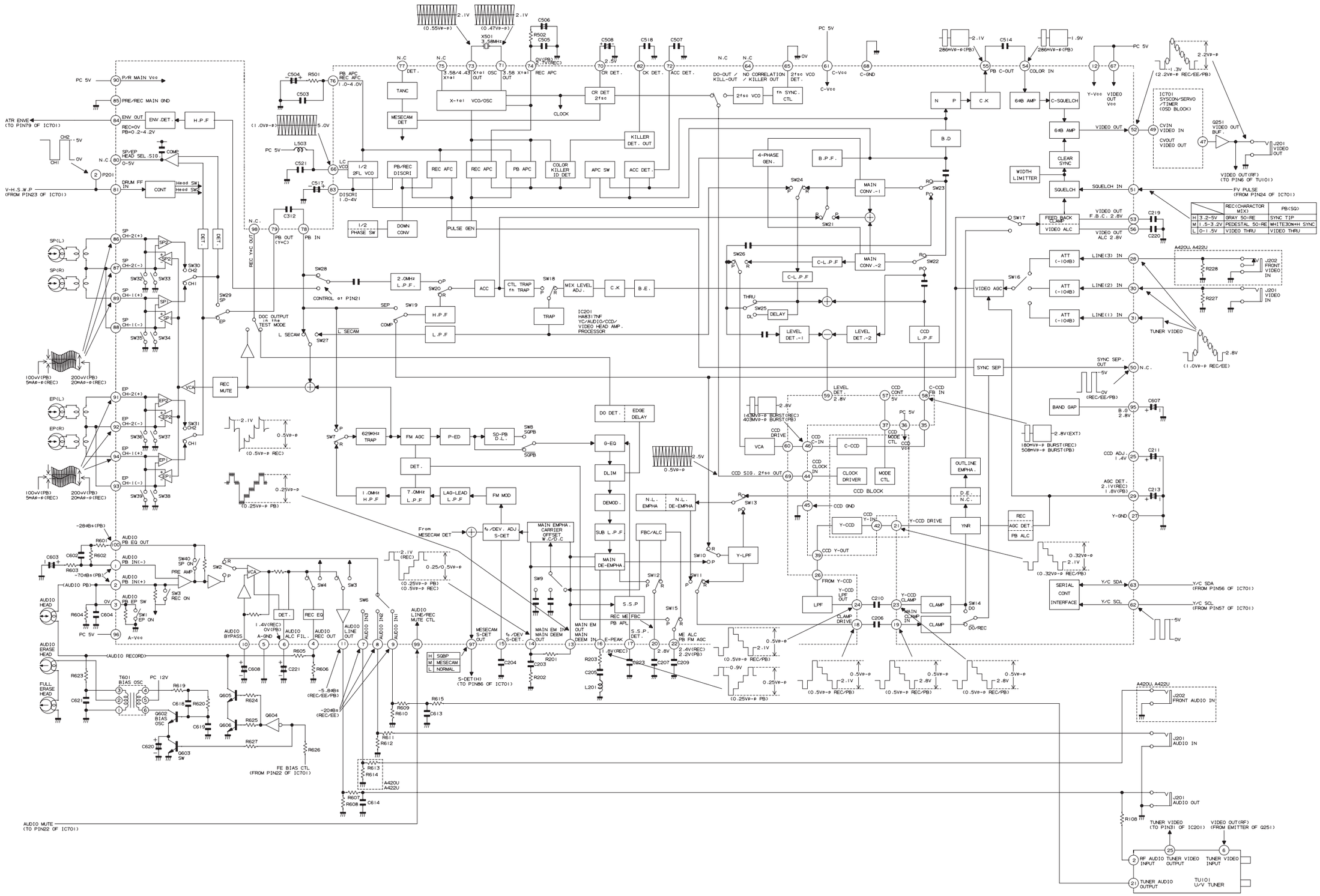
8. BLOCK DIAGRAM

SYSTEM SERVO BLOCK DIAGRAM



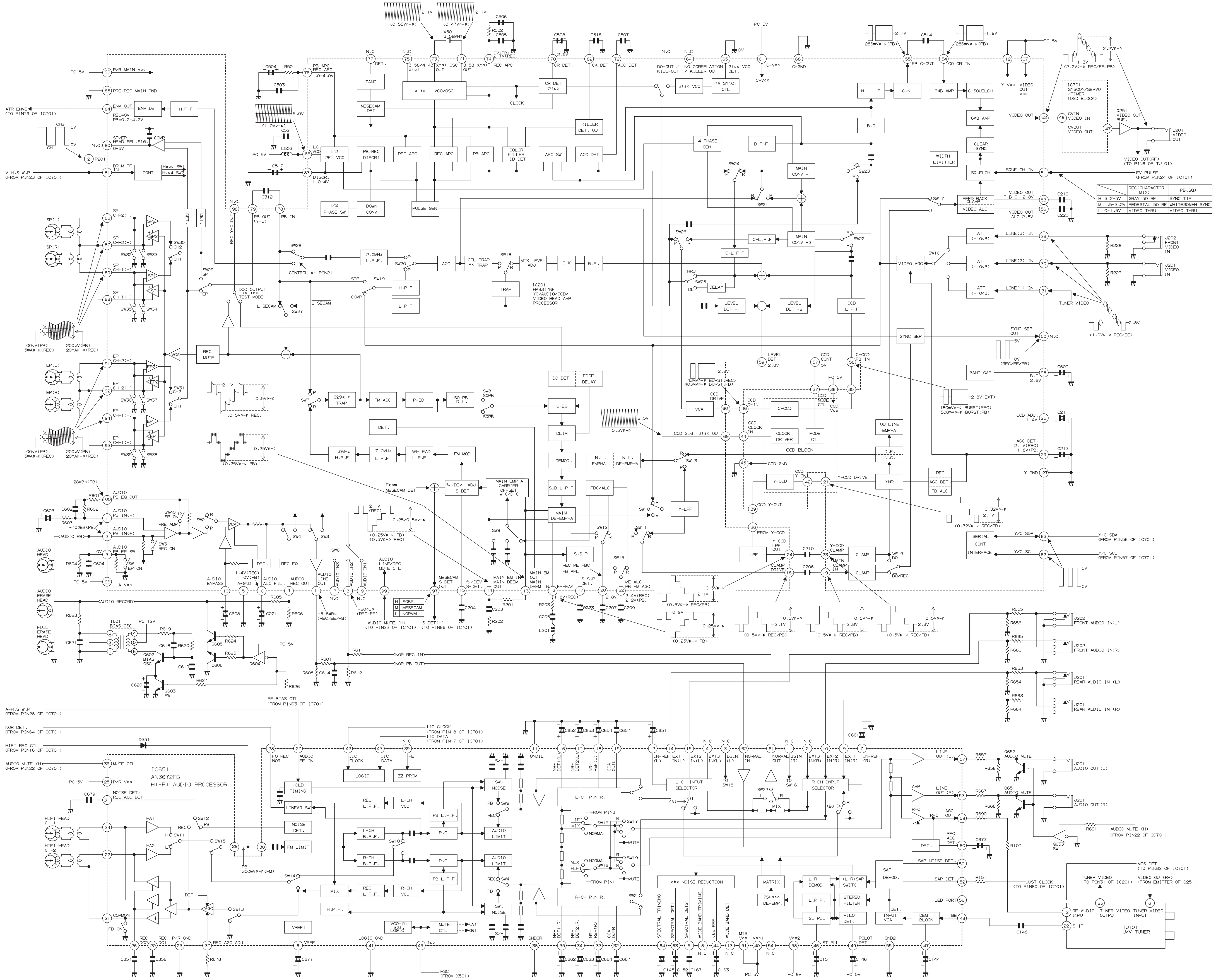
VC-A412U/A413U
VC-H812U/H813U

SIGNAL FLOW BLOCK DIAGRAM(VC-A410U(B)/A411U/A420U)

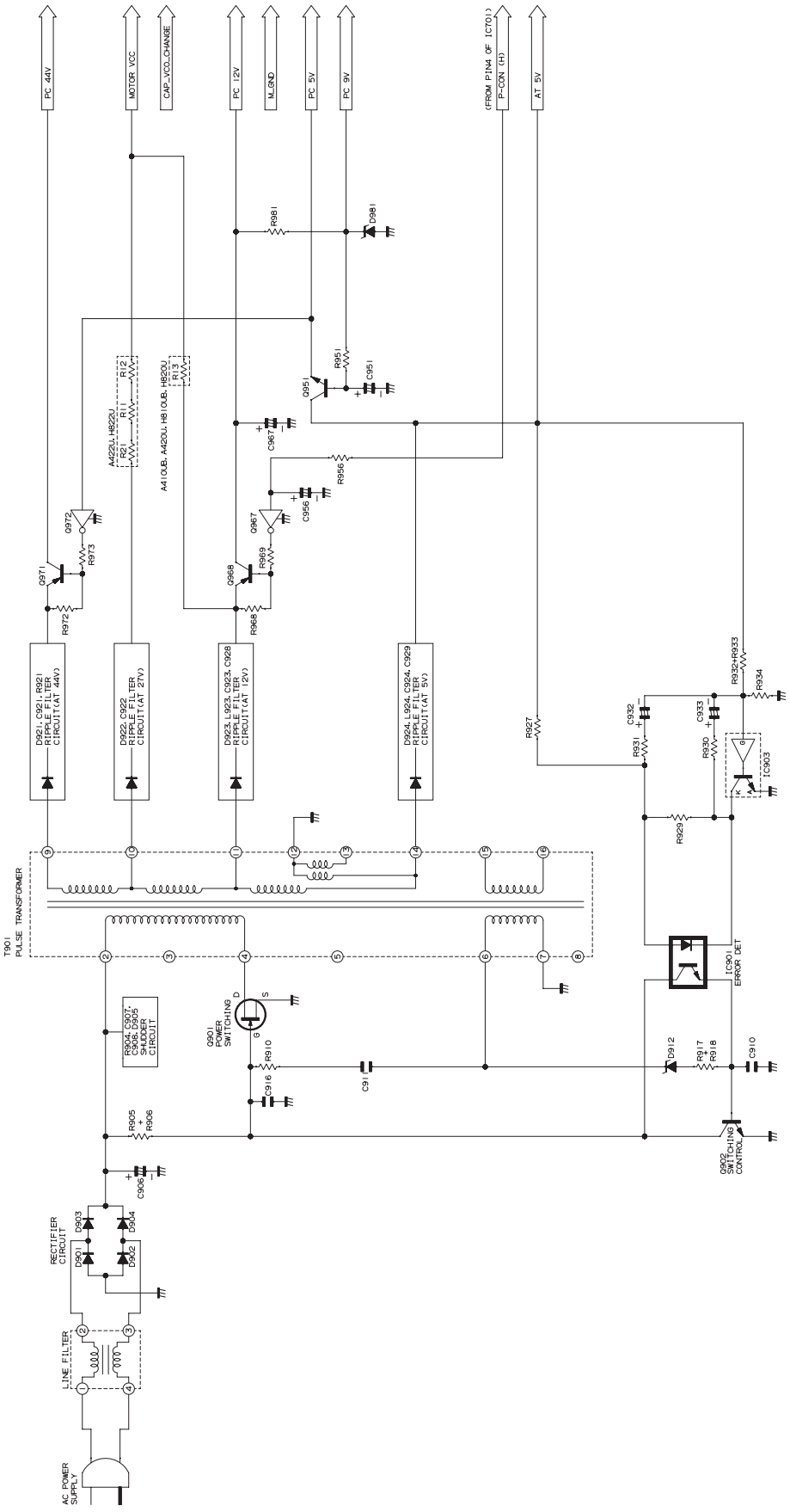


VC-A410U(B)/H810U(B)
VC-A411U/H811U
VC-A420U/H820U

SIGNAL FLOW BLOCK DIAGRAM(VC-H810U(B)/H811U/H820U)


IC201
HA8317NF
YC/AUDIO/CCD/
VIDEO HEAD AMP.
PROCESSOR
IC651
AN3672FB
Hi-Fi AUDIO PROCESSOR
IC701
SYSCON/SERVO
/TIMER
(OSD BLOCK)
TU101
U/V TUNER
P/R MAIN Vcc
PRE/REC MAIN GND
ENV OUT
ENV.DET.
H.P.F
ATR ENVE
(TO PIN79 OF IC701)
SP/EP
HEAD SEL.SIG.
DRUM FF
IN
CONT
V-H.S.W.P
(FROM PIN23 OF IC701)
X-tal VCO/OSC
CR DET
2fsc
CLOCK
TANC
MESECAM
DET
1/2
2FL VCO
PB/REC
DISCRI
REC AFC
REC APC
PB APC
COLOR
KILLER
ID DET
APC SW
ACC DET.
KILLER
DET. OUT
1/2
PHASE SW
DOWN
CONV
PULSE GEN
4-PHASE
GEN.
B.P.F.
MAIN
CONV.-1
MAIN
CONV.-2
C-L.P.F
DELAY
LEVEL
DET.-1
LEVEL
DET.-2
CCD
L.P.F
2fsc VCO
fh SYNC.
CTL
N P
C.K
6dB AMP
C-SQUELCH
B.D
CLEAR
SYNC
WIDTH
LIMITTER
SQUELCH
FEED BACK
CLAMP
VIDEO ALC
VIDEO AGC
ATT
(-10dB)
LINE(3) IN
LINE(2) IN
LINE(1) IN
TUNER VIDEO
J202
FRONT
VIDEO
IN
J201
VIDEO
IN
J201
VIDEO
OUT
Q251
VIDEO OUT
BUF.
VIDEO OUT(RF)
(TO PIN6 OF TU101)
FV PULSE
(FROM PIN24 OF IC701)
SYNC SEP
BAND GAP
REC(CHARACTOR MIX)
PB(SQ)
H 3.2-5V GRAY 50IRE SYNC TIP
M 1.5-3.2V PEDESTAL 50IRE WHITE30%+H SYNC
L 0-1.5V VIDEO THRU VIDEO THRU
2.0MHz
L.P.F.
ACC
CTL TRAP
fh TRAP
MIX LEVEL
ADJ.
C.K
B.E.
TRAP
H.P.F
L.P.F
REC
MUTE
629KHz
TRAP
FM AGC
P-ED
SO-PB
D.L.
DET.
1.0MHz
H.P.F
7.0MHz
L.P.F
LAG-LEAD
L.P.F
FM MOD
fo/DEV. ADJ.
S-DET
MAIN EMPHA.
CARRIER
OFFSET
W.C/D.C
DO DET.
EDGE
DELAY
G-EQ
DLIM
DEMOD.
SUB L.P.F
FBC/ALC
MAIN
DE-EMPHA.
S.S.P
N.L.
EMPHA
N.L.
DE-EMPHA
Y-LPF
VCA
C-CCD
CLOCK
DRIVER
MODE
CTL
CCD BLOCK
Y-CCD
OUTLINE
EMPHA.
D.E.
N.C.
YNR
REC
AGC DET.
PB ALC
LPF
CLAMP
SERIAL
CONT
INTERFACE
Y/C SDA
(FROM PIN56 OF IC701)
Y/C SCL
(FROM PIN57 OF IC701)
AUDIO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
T601
BIAS OSC
Q602
BIAS
OSC
Q603
SW
Q604
Q605
Q606
PRE AMP
REC EQ
FE BIAS CTL
(FROM PIN63 OF IC701)
AUDIO MUTE (H)
(TO PIN22 OF IC701)
S-DET(H)
(TO PIN86 OF IC701)
A-H.S.W.P
(FROM PIN28 OF IC701)
NOR DET.
(FROM PIN64 OF IC701)
HIFI REC CTL
(FROM PIN16 OF IC701)
AUDIO MUTE (H)
(FROM PIN22 OF IC701)
IIC CLOCK
(FROM PIN18 OF IC701)
IIC DATA
(FROM PIN17 OF IC701)
HIFI HEAD
CH-1
HIFI HEAD
CH-2
HOLD
TIMING
LINEAR SW
NOISE
DET.
FM LIMIT
LOGIC
ZZ-PROM
REC
L.P.F.
L-CH
VCO
L-CH
B.P.F.
R-CH
B.P.F.
R-CH
VCO
MIX
H.P.F.
VREF1
P.C.
PB L.P.F
AUDIO
LIMIT
SW.
NOISE
MUTE
CTL
VCO-fh
adj.
LOGIC
L-CH P.N.R.
R-CH P.N.R.
L-CH INPUT
SELECTOR
R-CH INPUT
SELECTOR
dbx NOISE REDUCTION
MATRIX
75usec
DE-EMP.
L-R
DEMOD.
(L-R)SAP
SWITCH
L.P.F.
STEREO
FILTER
SL PLL
PILOT
DET.
SAP
DEMOD.
INPUT
VCA
DEM
BLOCK
J202
FRONT AUDIO IN(L)
J202
FRONT AUDIO IN(R)
J201
REAR AUDIO IN (L)
J201
REAR AUDIO IN (R)
Q652
AUDIO MUTE
Q651
AUDIO MUTE
J201
AUDIO OUT (L)
J201
AUDIO OUT (R)
Q653
SW
MTS DET
(TO PIN82 OF IC701)
JUST CLOCK
(TO PIN80 OF IC701)
TUNER VIDEO
(TO PIN31 OF IC201)
VIDEO OUT(RF)
(FROM EMITTER OF Q251)
RF AUDIO
INPUT
TUNER VIDEO
OUTPUT
TUNER VIDEO
INPUT
S-IF
FSC
(FROM X501)

POWER CIRCUIT BLOCK DIAGRAM



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH " ⚠ " (▭) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET.
BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

AVIS DE SECURITE IMPORTANT:

LES PIECES MARQUEES " ⚠ " (▭) SONT IMPORTANTES POUR MAINTENIR LA SECURITE DE L'APPAREIL.
NE REMPLACER CES PIECES QUE PAR DES PIECES DONT LE NUMERO EST SPECIFIE POUR MAINTENIR LA SECURITE ET PROTEGER LE BON FONCTIONNEMENT DE L'APPAREIL.

- *The indicated voltages in the following diagram are measured with an SSVM, upon receiving color bars (400 Hz sound signal) in either the record mode or the play mode voltage is indicated as follows.*

  4.0 . . . . *Record mode (SP)*
  (4.0) . . . . *PB mode (SP)*
  4.0 . . . . *LP mode*
  4.0 . . . . *EP mode*

NOTE:

1. *The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors μF, unless otherwise noted P: μμF.*

Voltages and waveform are measured as follows:

- *DC voltages are measured with an SSVM placed between points indicated and chassis ground, with the supply voltage of 120V AC and all controls for normal positions.*

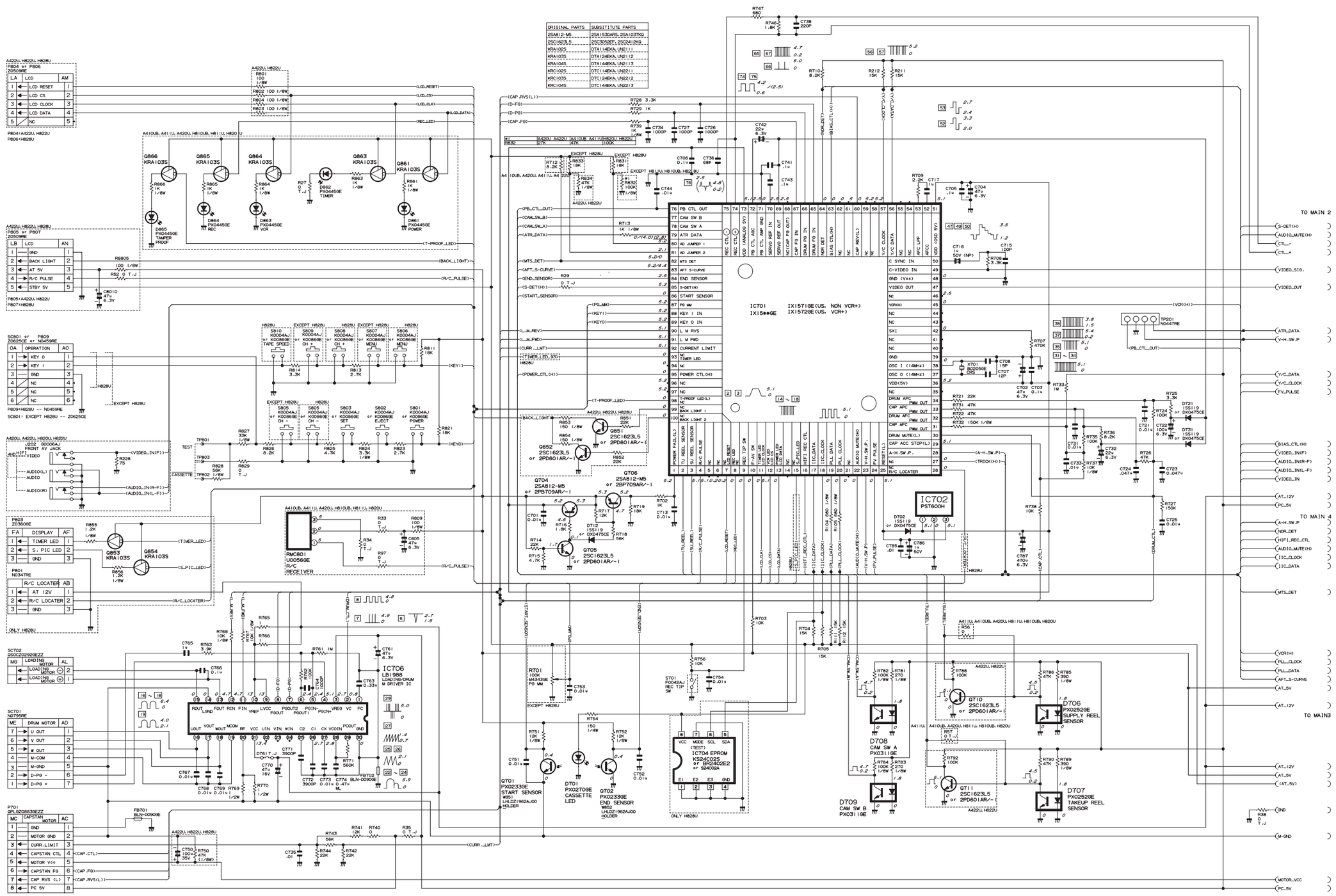
This circuit diagram is a standard one, actual circuits printed may be subject to change for product improvement without prior notice.

VC-A412U/A413U
VC-H812U/H813U

9. SCHEMATIC DIAGRAM AND PWB FOIL PATTERN

MAIN CIRCUIT(1)

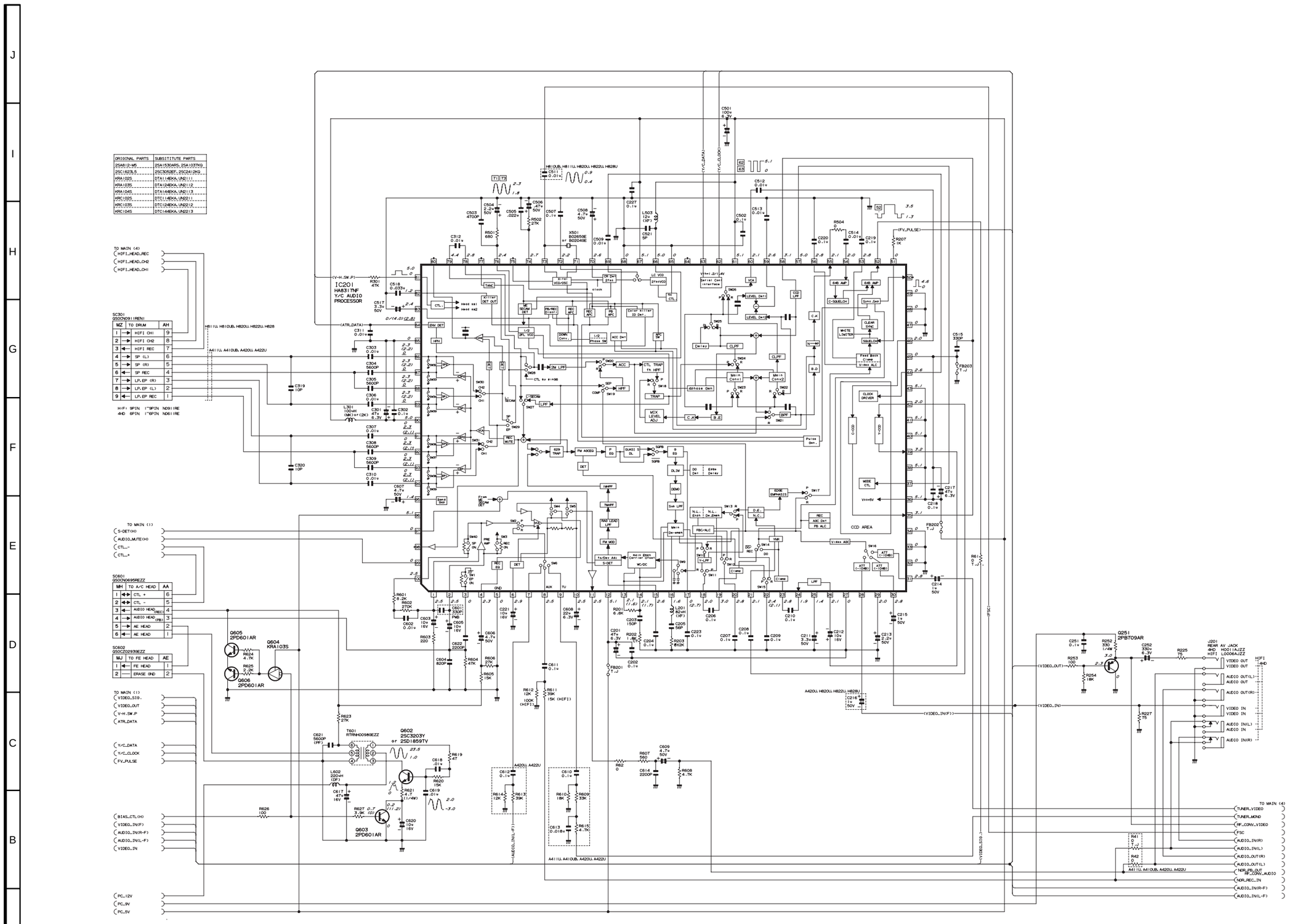
ORIGINAL PARTS	SUBSTITUTE PARTS
2SA812-M5	2SA1530ARS, 2SA1037KQ
2SC1623L5	2SC3052EF, 2SC2412KQ
KRA102S	DTA114EKA, UN2111
KRA103S	DTA124EKA, UN2112
KRA104S	DTA144EKA, UN2113
KRC102S	DTC114EKA, UN2211
KRC103S	DTC124EKA, UN2212
KRC104S	DTC144EKA, UN2213



*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

VC-A410U(B)/H810U(B)
VC-A411U/H811U
VC-A420U/H820U

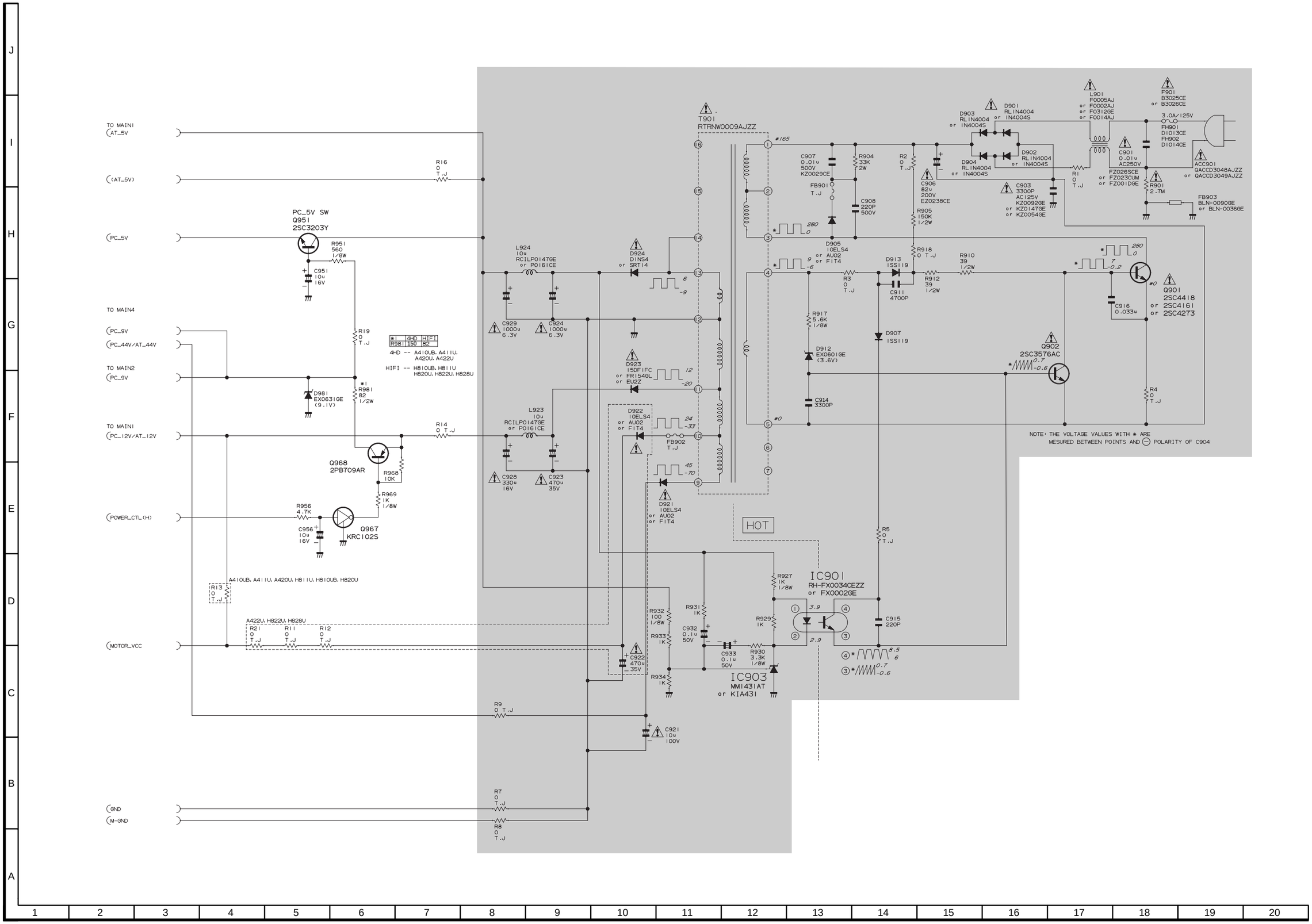
MAIN CIRCUIT(2)



*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

VC-A412U/A413U
VC-H812U/H813U

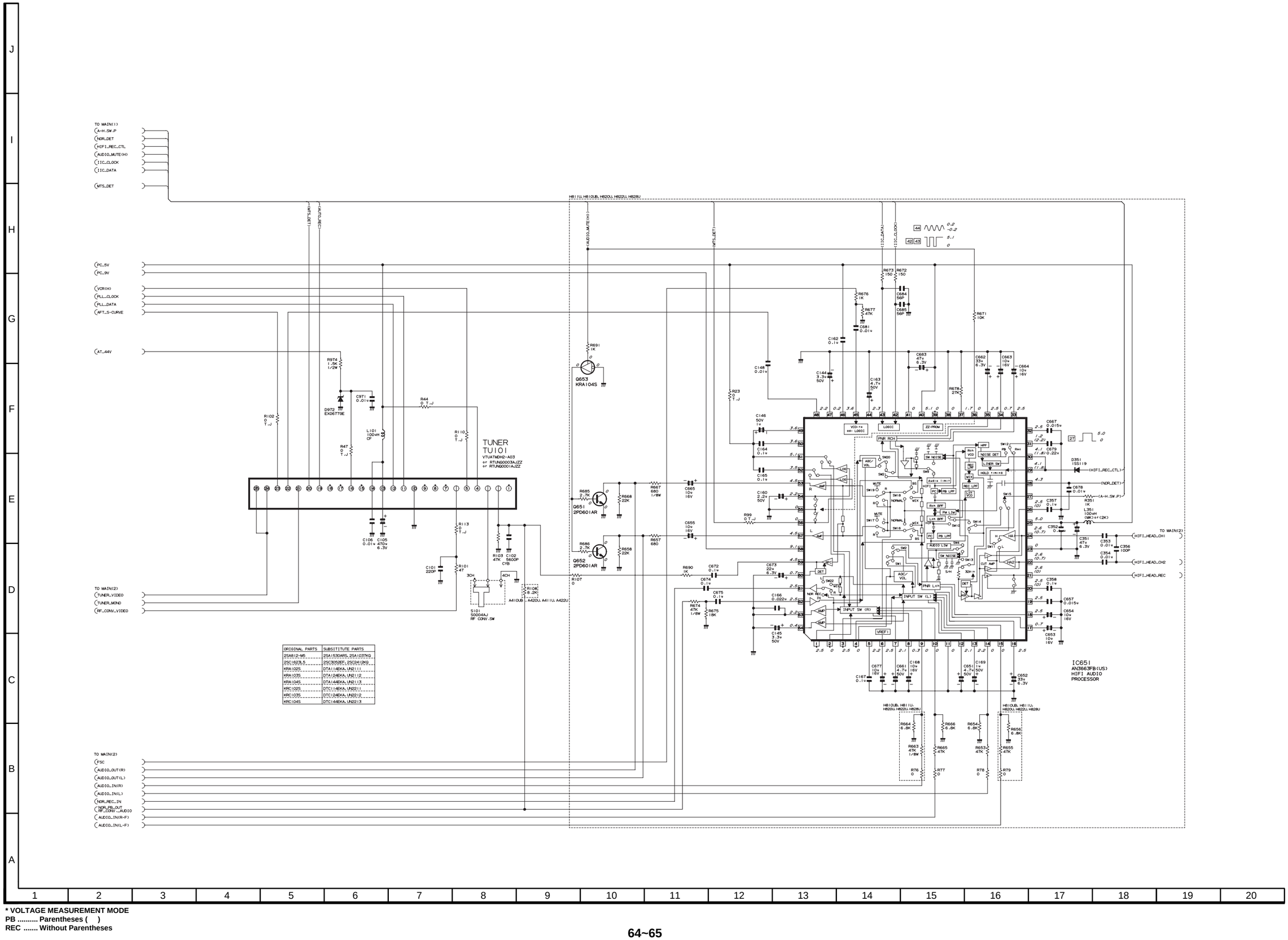
MAIN CIRCUIT(3)



*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

VC-A410U(B)/H810U(B)
VC-A411U/H811U
VC-A420U/H820U

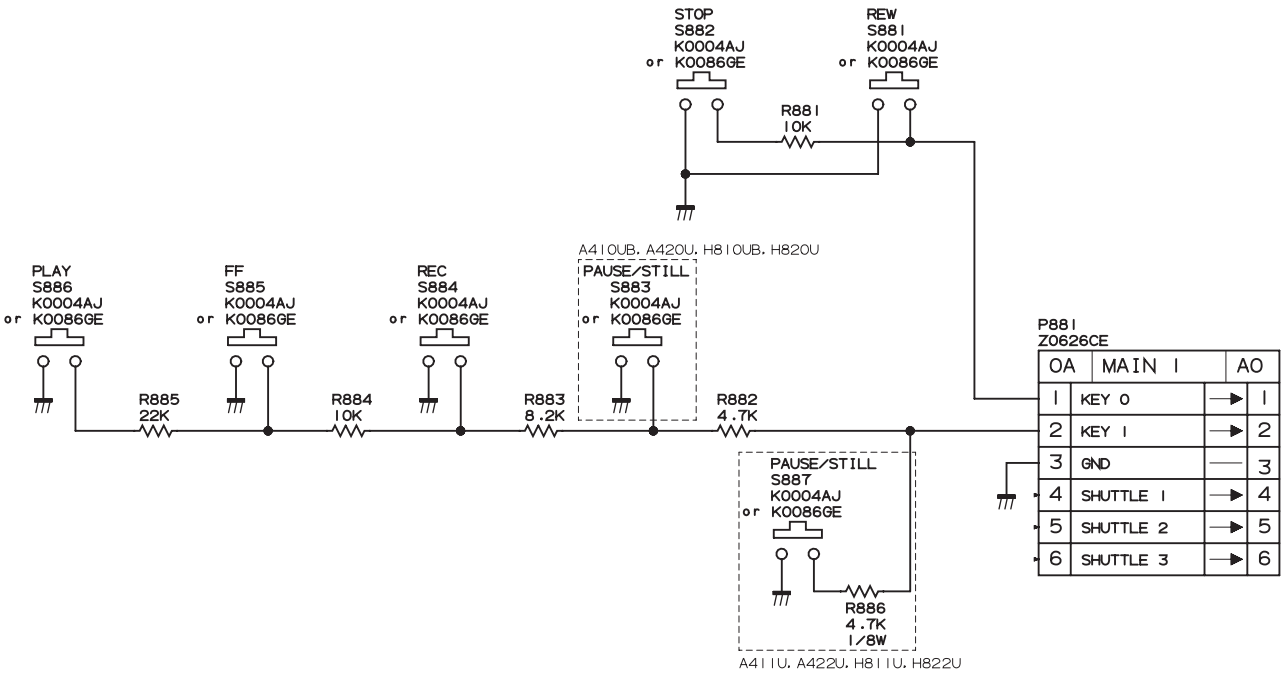
MAIN CIRCUIT(4)



ORIGINAL PARTS	SUBSTITUTE PARTS
2SA812-M5	2SA1530ARS, 2SA1037KQ
2SC1623_5	2SC3052EF, 2SC2412KQ
KRA102S	DTA114EKA, UN2111
KRA103S	DTA124EKA, UN2112
KRA104S	DTA144EKA, UN2113
KRC102S	DTC114EKA, UN2211
KRC103S	DTC124EKA, UN2212
KRC104S	DTC144EKA, UN2213

*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

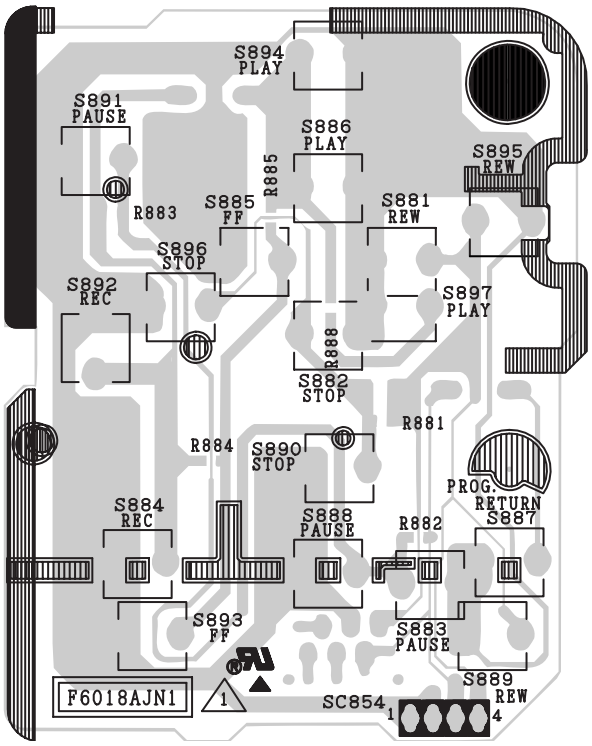
OPERATION CIRCUIT



1	2	3	4	5	6	7	8	9	10

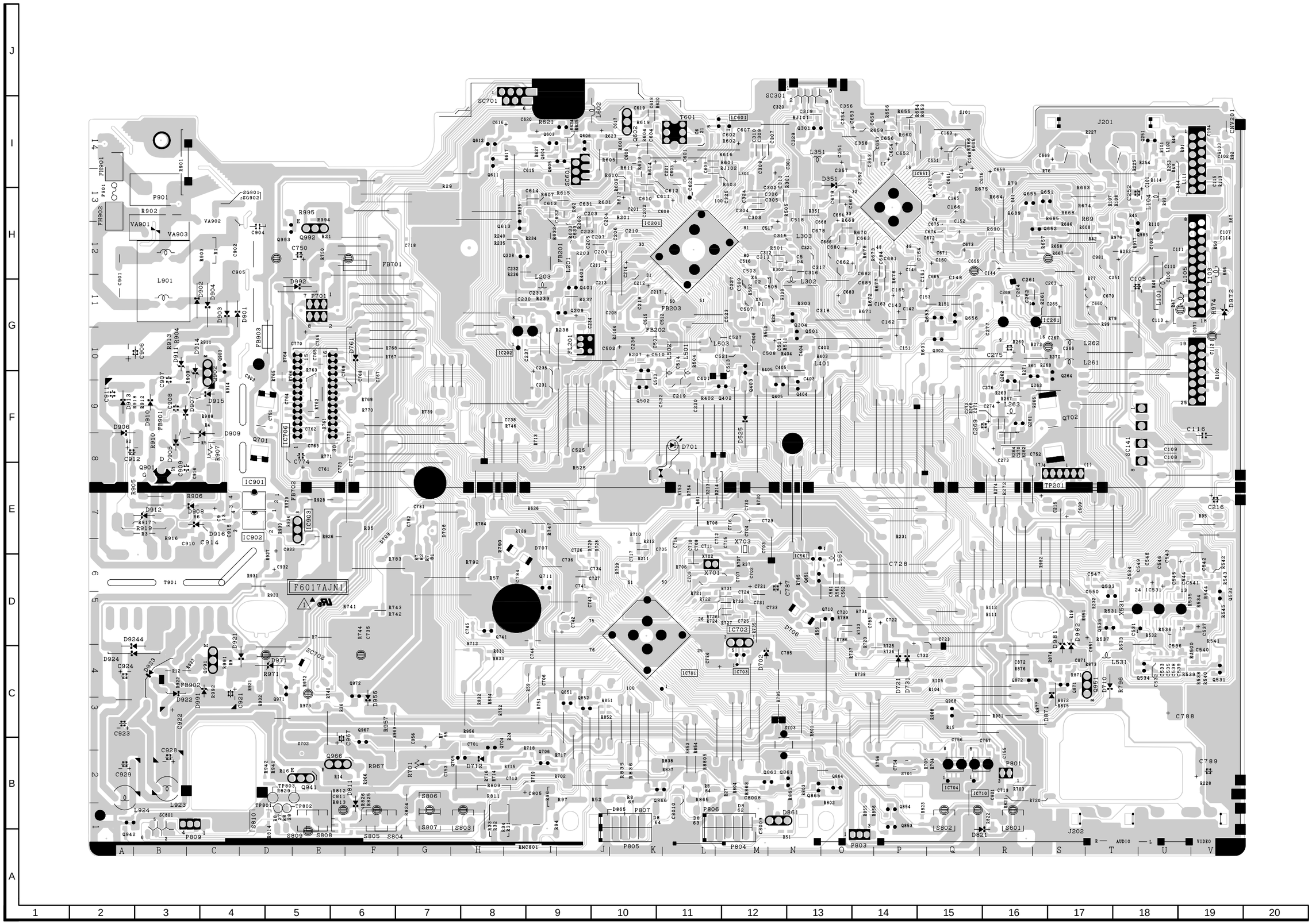
*** VOLTAGE MEASUREMENT MODE**
PB ..... Parentheses ( )
REC ..... Without Parentheses

PWB FOIL PATTERN
OPERATION PWB



VC-A412U/A413U
VC-H812U/H813U

MAIN PWB



- M E M O -

10. REPLACEMENT PARTS LIST
PARTS REPLACEMENT

Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by " ⚠ " and shaded areas in the Replacement Parts Lists and Schematic Diagrams.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER **2. REF. NO.**
3. PART NO. **4. DESCRIPTION**

in USA : Contact your nearest SHARP Parts Distributor to order.
For location of SHARP Parts Distributor,
Please Call Toll-free;
1-800-BE-SHARP

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING

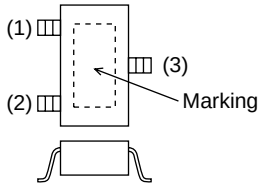


Fig. 1

(1) Base/Input
(2) Emitter/Ground
(3) Collector/Output

Package	Marking	Parts No.
Fig. 1	TR/TS	VS2SA1530ARS1
Fig. 1	LE/LF	VS2AC3052EF-1
Fig. 1	PC	VSKRA103S//-1
Fig. 1	PD	VSKRA104S//-1
Fig. 1	NC	VSKRC103S//-1
Fig. 1	ND/NE	VS2SD1306-E1E

MARK★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLACEMENT ITEM)

PRINTED WIRING BOARD ASSEMBLY

DUNTK6017TEVA	-	Main Unit (VC-H810B/BC)	—
DUNTK6017TEVB	-	Main Unit (VC-A410B/BC)	—
DUNTK6017TEVC	-	Main Unit (VC-H820U/UC)	—

10. LISTE DES PIECES
CHANGE DES PIECES

De nombreuses pièces électriques et mécaniques de magnétoscopes présentent des caractéristiques particulières de sécurité.
Ces caractéristiques ne sont pas toujours évidentes à l'inspection visuelle et la protection qu'elles assurent ne peut pas toujours être obtenue par des pièces de rechange étalonnées à un régime de tension, une puissance, etc. superieurs. Les pièces de rechange qui présentent ces caractéristiques spéciales de sécurité, sont identifiées dans ce manuel: les pièces électriques qui présentent ces particularités, sont repérée par la marque " ⚠ " et sont hachurées dans les listes de pièces et dans les diagrammes schématiques.
La substitution d'une pièce de rechange par une autre qui ne présente pas les mêmes caractéristiques de sécurité que la pièce recommandée par l'usine et repérée dans ce manuel de service, peut provoquer une électrocution, un incendie ou tout autre sinistre.

"COMMENT COMMANDER LES PIECES DE RECHANGE"

Pour que votre commande soit rapidement et correctement remplie, veuillez fournir les renseignements suivants.

1. NUMERO DU MODELE **2. NO. DE REF**
3. NO. DE PIECE **4. DESCRIPTION**

In **CANADA**: Contact Sharp Electronics of Canada Limited
Phone (416) 890-2100

★MARQUE: SECTION LIVRAISON DES PIECES DE RECHANGE

Ref. No.	Part No.	★	Description	Code
	DUNTK6017TEVD	-	Main Unit (VC-A420U/UC)	—
	DUNTK6017TEVK	-	Main Unit (VC-A411U/UC)	—
	DUNTK6017TEVL	-	Main Unit (VC-H811U/UC)	—
	DUNTK6018TEV2	-	Operation Unit (VC-A410B/BC/A420U/UC/ H810B/BC/H820U/UC)	—
	DUNTK6018TEV3	-	Operation Unit (VC-A411U/UC/H811U/UC)	—

DUNTK6017TEVA(VC-H810B/BC)
DUNTK6017TEVB(VC-A410B/BC)
DUNTK6017TEVC(VC-H820U/UC)
DUNTK6017TEVD(VC-A420U/UC)
DUNTK6017TEVK(VC-A411U/UC)
DUNTK6017TEVL(VC-H811U/UC)
MAIN UNIT

TUNER

TU101	RTUNQ0003AJZZ	V	Tuner	BC

INTEGRATED CIRCUITS

IC201	VHiHA8317NF-1	V	HA118317NF, Y/C Audio Processor	AZ
IC651	VHiAN3663FB-1Q	V	AN3663FB, Hifi Audio Processor (VC-H810B/BC/H820U/ UC/H811U/UC)	AU
IC701	RH-iX1571GEZZQ	J	IX1571GE	AW
IC702	VHiPST600H/-1	V	PST600H	AE

Ref. No.	Part No.	★	Description	Code
IC706	VHiLB1988//-1	V	LB1988, Loading/Drum M Driver IC	AQ
IC903	VHiMM1431AT-1	V	MM1431AT	AE
			TRANSISTORS	
Q251	VS2PB709AR/-1	V	2PB709AR	AB
Q602	VS2SC3203Y/-1	V	2SC3203Y	AB
Q603	VS2PD601AR/-1	V	2PD601AR	AB
Q604	VSKRA103S//-1	V	KRA103S	AA
Q605	VS2PD601AR/-1	V	2PD601AR	AB
Q606	VS2PD601AR/-1	V	2PD601AR	AB
Q651	VS2PD601AR/-1	V	2PD601AR	AB
Q652	VS2PD601AR/-1	V	2PD601AR	AB
Q653	VSKRA104S//-1	V	KRA104S	AA
Q704	VS2PB709AR/-1	V	2PB709AR	AB
Q705	VS2PD601AR/-1	V	2PD601AR	AB
Q706	VS2PB709AR/-1	V	2PB709AR	AB
Q861	VSKRA103S//-1	V	KRA103S	AA
Q863	VSKRA103S//-1	V	KRA103S	AA
Q864	VSKRA103S//-1	V	KRA103S	AA
Q865	VSKRA103S//-1	V	KRA103S	AA
Q866	VSKRA103S//-1	V	KRA103S	AA
⚠ Q901	VS2SC4418//-1	V	2SC4418	AH
⚠ Q902	VS2SC3576AC-1	V	2SC3576AC	AC
Q951	VS2SC3203Y/-1	V	2SC3203Y	AB
Q967	VSKRC102S//-1	V	KRC102S	AA
Q968	VS2PB709AR/-1	V	2PB709AR	AB
			DIODES AND LED'S	
D351	VHD1SS119//-1	V	1SS119 (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
D701	RH-PX0270GEZZ	J	LED, Cassete LED	AC
D702	VHD1SS119//-1	V	1SS119	AB
D706	RH-PX0252GEZZ	J	LED, Supply Reel Sensor	AF
D707	RH-PX0252GEZZ	J	LED, Takeup Reel Sensor	AF
D708	RH-PX0311GEZZ	J	PhotoDiode, Cam SW A	AD
D709	RH-PX0311GEZZ	J	PhotoDiode, Cam SW B	AD
D712	VHD1SS119//-1	V	1SS119	AB
D721	VHD1SS119//-1	V	1SS119	AB
D731	VHD1SS119//-1	V	1SS119	AB
D861	RH-PX0445GEZZ+	J	PhotoDiode, Power	AC
D862	RH-PX0445GEZZ+	J	PhotoDiode, Timer	AC
D863	RH-PX0445GEZZ+	J	PhotoDiode, VCR	AC
D864	RH-PX0445GEZZ+	J	PhotoDiode, REC	AC
D865	RH-PX0445GEZZ+	J	PhotoDiode, Proof	AC
⚠ D901	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D902	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D903	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D904	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D905	VHDAU02++++-1∗	V	AU02	AC
⚠ D907	VHD1SS119//-1	V	1SS119	AB
⚠ D912	RH-EX0601GEZZ	J	Zener Diode, 3.6V	AA
⚠ D913	VHD1SS119//-1	V	1SS119	AB
⚠ D921	VHDAU02++++-1∗	V	AU02	AC
⚠ D923	VHDFR154GL+1E	V	FR154GL	AC
⚠ D924	VHDD1NS4///-1	V	D1NS4	AE
D972	RH-EX0677GEZZ	J	Zener Diode	AB
D981	RH-EX0631GEZZ	J	Zener Diode, 9.1V	AA
⚠ IC901	RH-FX0034CEZZ	J	PC817	AE
Q701	RH-PX0233GEZZ	J	LED, Start Sensor	AD
Q702	RH-PX0233GEZZ	J	LED, End Sensor	AD
			PACKAGED CIRCUITS	
X501	RCRSB0204GEZZ	J	Crystal, CRSB0204GE	AG
X701	RCRSB0205GEZZ	J	Crystal, CRSB0205GE	AM
			COILS	
L101	VP-CF101K0000	V	Peaking, 100µH	AB
L201	VP-XF820K0000	V	Peaking, 82µH	AB
L301	VP-MK101K0000	V	Peaking, 100µH	AB
L351	VP-MK101K0000	V	Peaking, 100µH (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
L503	VP-XF120K0000	V	Peaking, 12µH	AB
L602	VP-DF221K0000	V	Peaking, 220µH	AB
⚠ L901	RCiLF0005AJZZ	V	Coil, CiLF0005AJ	AE
⚠ L923	RCiLP0147GEZZ	J	Coil,10µH	AC
⚠ L924	RCiLP0147GEZZ	J	Coil,10µH	AC
			TRANSFORMERS	
T601	RTRNH0098GEZZ	J	OSC. Transformer	AE
⚠ T901	RTRNW0009AJZZ	V	Transformer	AK
			CONTROL	
R701	RVR-M4343GEZZ	V	Variable Resistor, 100k	AB
			CAPACITORS	
C101	VCKYCY1HB221K	V	220p 50V Ceramic	AA
C102	VCKYCY1HB562K	V	5600p 50V Ceramic	AA
C105	VCEA0A0JW477M	V	470 6.3V Electrolytic	AC
C106	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C144	VCEA9M1HW335M	V	3.3 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C145	VCEA9M1HW335M	V	3.3 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C146	VCEA9M1HW105M	V	1 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C148	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AA
C160	VCEA9M1HW225M	V	2.2 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C162	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C163	VCEA9M1HW475M	V	4.7 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C164	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C165	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C166	VCKYCY1EB223K	V	0.022 25V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AA
C167	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C168	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C169	VCEA9M1HW105M	V	1 50V Electrolytic (VC-H810B/BC/H820U/ UC/H811U/UC)	AB
C201	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C202	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C203	VCCCCY1HH151J	V	150p 50V Ceramic	AA
C204	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C205	VCCCCY1HH560J	V	56p 50V Ceramic	AA
C206	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C207	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C208	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C209	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C210	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C211	VCEA9M1HW335M	V	3.3 50V Electrolytic	AB
C212	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C213	VCEA9M1HW225M	V	2.2 50V Electrolytic	AB
C214	VCEA9M1HW105M	V	1 50V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code
C215	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C216	VCEA9A1HW105M	V	1 50V Electrolytic (VC-A420U/UC/H820U/UC)	AB
C217	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C218	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C219	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C220	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C221	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C223	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C227	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C251	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C252	VCEA0A0JW337M	V	330 6.3V Electrolytic	AC
C301	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C302	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C303	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C304	VCKYCY1HB562K	V	5600p 50V Ceramic	AA
C305	VCKYCY1HB562K	V	5600p 50V Ceramic	AA
C306	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C307	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C308	VCKYCY1HB562K	V	5600p 50V Ceramic	AA
C309	VCKYCY1HB562K	V	5600p 50V Ceramic	AA
C310	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C311	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C312	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C319	VCCCCY1HH100D	V	10p 50V Ceramic	AA
C320	VCCCCY1HH100D	V	10p 50V Ceramic	AA
C351	VCEA9M0JW476M	V	47 6.3V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C352	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C353	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C354	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C356	VCCCCY1HH101J	V	100p 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C357	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C358	VCKYCY1CB104K	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C501	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C502	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C503	VCKYCY1HB472K	V	4700p 50V Ceramic	AA
C504	VCEA9A1HW225M	V	2.2 50V Electrolytic	AB
C505	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C506	VCEA9M1HW474M	V	0.47 50V Electrolytic	AB
C507	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C508	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C509	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C511	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C512	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C513	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C514	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C515	VCKYCY1HB331K	V	330p 50V Ceramic	AA
C517	VCEA9A1HW335M	V	3.3 50V Electrolytic	AB
C518	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
C521	VCCCCY1HH5R0C	V	5p 50V Ceramic	AA
C602	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C603	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C604	VCKYCY1HB821K	V	820p 50V Ceramic	AA
C605	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C606	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C607	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C608	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C609	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C610	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A410B/BC/A411U/UC/A420U/UC)	AA
C611	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C612	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A410B/BC/A411U/UC/A420U/UC)	AA
C613	VCKYCY1EB183K	V	0.018 25V Ceramic (VC-A410B/BC/A411U/UC/A420U/UC)	AA
C614	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C617	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C618	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C619	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C620	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C621	VCQPYA2AA562J	V	5600p 100V	AC
C622	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C651	VCEA9M1HW475M	V	4.7 50V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C652	VCEA9M0JW336M	V	33 6.3V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C653	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C654	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C655	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C657	VCKYCY1EB153K	V	0.015 25V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C661	VCEA9M1HW475M	V	4.7 50V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C662	VCEA9M0JW336M	V	33 6.3V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C663	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C664	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C665	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C667	VCKYCY1EB153K	V	0.015 25V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C671	VCEA9M1CW476M	V	47 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C672	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C673	VCEA9M0JW226M	V	22 6.3V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C674	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C675	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C677	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C678	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/UCH811U/UC)	AA

Ref. No.	Part No.	★	Description	Code
C679	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C681	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C683	VCEA9M0JW476M	V	47 6.3V Electrolytic (VC-H810B/BC/H820U/UC/H811U/UC)	AB
C684	VCCCCY1HH560J	V	56p 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C685	VCCCCY1HH560J	V	56p 50V Ceramic (VC-H810B/BC/H820U/UC/H811U/UC)	AA
C702	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C703	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C704	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C705	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C706	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C707	VCCCCY1HH120J	V	12p 50V Ceramic	AA
C708	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C713	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C715	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C716	VCE9EM1HW105M	V	1 50V Electrolytic	AB
C717	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C721	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C722	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C723	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C724	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C725	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C726	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C727	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C731	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C732	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C733	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C734	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C735	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C736	VCCCCY1HH680J	V	68p 50V Ceramic	AA
C738	VCKYCY1HB221K	V	220p 50V Ceramic	AA
C741	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C742	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C743	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C744	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C751	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C752	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C753	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C754	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C761	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C763	VCKYCY1CF334Z	V	0.33 16V Ceramic	AA
C764	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C765	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C766	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C767	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C768	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C769	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C770	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C771	VCKYCY1HB392K	V	3900p 50V Ceramic	AA
C772	VCKYCY1HB392K	V	3900p 50V Ceramic	AA
C773	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C774	VCFYFA1HA474J	V	0.47 50V Mylar	AC
C785	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C786	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C787	VCEA0A0JW477M	V	470 6.3V Electrolytic	AC
C805	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
⚠ C901	RC-FZ026SCEZZ	V	0.01 250V Electrolytic	AE
⚠ C903	RC-KZ0092GEZZ	J	3300p AC125V Ceramic	AC
⚠ C906	RC-EZ0238CEZZ	V	82 200V Electrolytic	AE
⚠ C907	RC-KZ0029CEZZ	V	0.01 500V Ceramic	AC
⚠ C908	VCKYPA2HB221K	V	220p 500V Ceramic	AA
⚠ C911	VCQYTA1HM472K	V	4700p 50V Mylar	AB
⚠ C914	VCKYPA1HB332K	V	3300p 50V Ceramic	AA
⚠ C915	VCKYCY1HB221K	V	220p 50V Ceramic	AA
⚠ C916	VCKYCY1HF333Z	V	0.033 50V Ceramic	AA
⚠ C921	VCEA0A2AW106M	V	10 100V Electrolytic	AC
⚠ C923	VCEA0A1VW477M	V	470 35V Electrolytic	AB
⚠ C924	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
⚠ C928	VCEA0A1CW337M	V	330 16V Electrolytic	AC
⚠ C929	VCEA0A0JW108M	V	1000 6.3V Electrolytic	AC
⚠ C932	VCEA9M1HW104M	V	0.1 50V Electrolytic	AC
⚠ C933	VCEA9M1HW104M	V	0.1 50V Electrolytic	AC
C951	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C956	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C971	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA

RESISTORS

RJ102	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R42	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-A410B/BC/A411U/UC/A420U/UC)	AA
R56	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R62	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R76	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H810B/BC/H811U/UC/H820U/UC)	AA
R77	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H810B/BC/H811U/UC/H820U/UC)	AA
R78	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H810B/BC/H811U/UC/H820U/UC)	AA
R79	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H810B/BC/H811U/UC/H820U/UC)	AA
R101	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA
R103	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R104	VRD-RA2BE681J	V	680 1/8W Carbon	AA
R105	VRD-RA2BE681J	V	680 1/8W Carbon	AA
R107	VRS-CY1JF000J	V	0 1/16W Metal Oxide (VC-H810B/BC/H820U/UC/H811U/UC)	AA
R108	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A410B/BC/A411U/UC/A420U/UC)	AA
R111	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R112	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R201	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide	AA
R202	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R203	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R207	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R211	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R212	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R225	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R227	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R228	VRS-CY1JF750J	V	75 1/16W Metal Oxide	AA
R252	VRD-RA2EE331J	V	330 1/4W Carbon	AA
R253	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R254	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R301	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R351	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H810B/BC/H820U/UC/H811U/UC)	AA
R501	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R502	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R504	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R601	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R602	VRS-CY1JF274J	V	270k 1/16W Metal Oxide	AA
R603	VRS-CY1JF221J	V	220 1/16W Metal Oxide	AA
R604	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R605	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R606	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R607	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R608	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R609	VRS-CY1JF333J	V	33k 1/16W Metal Oxide (VC-A410B/BC/A411U/UC/A420U/UC)	AA
R610	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-A410B/BC/A411U/UC/A420U/UC)	AA

Ref. No.	Part No.	★	Description	Code
R611	VRS-CY1JF153J	V	15k 1/16W Metal Oxide (VC-H810B/BC/H811U/UC/ H820U/UC)	AA
R611	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R612	VRS-CY1JF104J	V	100k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R612	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R613	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R614	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R615	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R619	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA
R620	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R621	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA
R623	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
R624	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R625	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R626	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R627	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
R653	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R654	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R655	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R656	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R657	VRS-CY1JF681J	V	680 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R658	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R663	VRD-RA2BE473J	V	47k 1/8W Carbon (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R664	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R665	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R666	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R667	VRD-RA2BE681J	V	680 1/8W Carbon (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R668	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R671	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R672	VRS-CY1JF151J	V	150 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R673	VRS-CY1JF151J	V	150 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R674	VRD-RA2BE473J	V	47k 1/8W Carbon (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R675	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R676	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R677	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R678	VRS-CY1JF273J	V	27k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R685	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R686	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R690	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R691	VRD-RA2BE102J	V	1k 1/8W Carbon (VC-H810B/BC/H811U/ UC/H820U/UC)	AA
R702	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R703	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R704	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R705	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R707	VRS-CY1JF474J	V	470k 1/16W Metal Oxide	AA
R708	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R709	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R710	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R712	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A410B/BC/A411U/ UC/A420U/UC)	AA
R713	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R714	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R715	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R716	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R717	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R718	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R719	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R721	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R722	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R724	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R725	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R726	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R727	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R728	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R729	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R731	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R732	VRD-RA2BE154J	V	150k 1/8W Carbon	AA
R733	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA
R735	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R736	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R737	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R738	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R739	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R740	VRS-CY1JF000J	V	0 1/16W Metal Oxide	AA
R741	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R742	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R743	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R744	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R746	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R747	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R751	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R752	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R754	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R756	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R761	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA
R762	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R763	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R765	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R766	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R767	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R768	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R769	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R770	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R771	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA
R781	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R782	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R783	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R784	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R785	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R786	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R789	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R790	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R809	VRD-RA2BE101J	V	100 1/8W Carbon	AB
R811	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R813	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R814	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R821	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R823	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R824	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA
R825	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R826	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R827	VRD-RA2BE333J	V	33k 1/8W Carbon	AA
R828	VRD-RA2BE563J	V	56k 1/8W Carbon	AA
R831	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R832	VRD-RA2BE104J	V	100k 1/8W Carbon (VC-H820U/UC)	AA
R832	VRD-RA2BE273J	V	27k 1/8W Carbon (VC-A420U/UC)	AA
R832	VRD-RA2BE473J	V	47k 1/8W Carbon (VC-A410B/BC/A411U/UC)	AA
R833	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R861	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R863	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R864	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R865	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R866	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
⚠ R901	RR-DZ0047CEZZ	J	2.7M 1/2W Carbon	AD
⚠ R904	VRS-VU3DE333J	V	33k 2W Metal Oxide	AB
⚠ R905	VRD-RM2HD154J	V	150k 1/2W Carbon	AA
⚠ R910	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R912	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R917	VRD-RA2BE562J	V	5.6k 1/8W Carbon	AA
⚠ R927	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
⚠ R929	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
⚠ R930	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA
⚠ R931	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
⚠ R932	VRD-RA2BE101J	V	100 1/8W Carbon	AB
⚠ R933	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
⚠ R934	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R951	VRD-RA2BE561J	V	560 1/8W Carbon	AA
R956	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R968	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R969	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R974	VRD-RM2HD152J	V	1.5k 1/2W Carbon	AA
R981	VRD-RA2EE151J	V	150 1/4W Carbon (VC-A410B/BC/A411U/UC/A420U/UC)	AA
R981	VRD-RM2HD820J	V	82 1/2W Carbon (VC-H810B/BC/H811U/UC/H820U/UC)	AA

BALUNES

FB701	RBLN-0090GEZZ∗	J	Balun, BLN-0090GE	AB
FB702	RBLN-0090GEZZ∗	J	Balun, BLN-0090GE	AB
⚠ FB903	RBLN-0090GEZZ∗	J	Balun, BLN-0090GE	AB

SWITCHES

S101	QSW-S0004AJZZ	V	Switch, RF Conv. SW	AF
S701	QSW-F0042AJZZ	V	Switch, Rec Tip SW	AG
S801	QSW-K0086GEZZ	J	Switch, Power	AC
S802	QSW-K0086GEZZ	J	Switch, Eject	AC
S803	QSW-K0086GEZZ	J	Switch, Set	AC
S805	QSW-K0086GEZZ	J	Switch, CH-	AC
S807	QSW-K0086GEZZ	J	Switch, Menu	AC
S809	QSW-K0086GEZZ	J	Switch, CH+	AC

MISCELLANEOUS PARTS

⚠ ACC901	QACCD3048AJZZ	V	AC Cord (VC-A410B/BC/A411U/UC/H810B/BC/H811U/UC)	AN
⚠ ACC901	QACCD3049AJZZ	V	AC Cord (VC-A420U/UC/H820U/UC)	AN
FH901	QFSHD1013CEZZ	V	Fuse Holder	AC
FH902	QFSHD1014CEZZ	V	Fuse Holder	AC
⚠ F901	QFS-B3025CEZZ	V	Fuse, 3.0A/125A	AD
J201	QJAKH0011AJZZ	V	Jack, Rear AV Jack (VC-A410B/BC/A411U/UC/A420U/UC)	AK
J201	QJAKL0006AJZZ	V	Jack, Rear AV Jack (VC-H810B/BC/H820U/UC/H811U/UC)	AL
J202	QJAKF0065AJZZ	V	Front AV Jack (VC-A420U/UC)	AG
J202	QJAKG0006AJZZ	V	Front AV Jack (VC-H820U/UC)	AH
P701	QPLGZ0883GEZZ	J	Plug, 8 Pin	AD
RMC801	RRMCU0056GEZZ	J	Remote Receiver	AQ
SC301	QSOCN0611REN1	V	Socket, 6 Pin (VC-A410B/BC/A411U/UC/A420U/UC)	AC
SC301	QSOCN0911REN1	V	Socket, 9 Pin (VC-H810B/BC/H811U/UC/H820U/UC)	AD
SC601	QSOCN0695REZZ	V	Socket, 6Pin	AB
SC602	QSOCZ0293GEZZ	J	Socket, 2 Pin	AC
SC701	QSOCN0795REZZ	V	Socket, 7 Pin	AC
SC702	QSOCZ0292GEZZ	J	Socket, 2 Pin	AC
SC801	QSOCZ0625CEZZ	V	Socket, 6 Pin	AC
TP201	QPLGN0447REZZ	V	Plug, 4 Pin	AA
W851	LHLDZ1962AJ00	V	Holder	AD
W852	LHLDZ1962AJ00	V	Holder	AD

DUNTK6018TEV2 (VC-A410B/BC/A420U/UC/H810B/BC/H820U/UC) DUNTK6018TEV3(VC-A411U/UC/H811U/UC) OPERATION UNIT

RESISTORS

R881	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R882	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R883	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R884	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R885	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R886	VRD-RA2BE472J	V	4.7k 1/8W Carbon (VC-A411U/UC/H811U/UC)	AA

SWITCHES

S881	QSW-K0086GEZZ	J	Switch, REW	AC
S882	QSW-K0086GEZZ	J	Switch, Stop	AC
S883	QSW-K0086GEZZ	J	Switch, Pause/Still (VC-A410B/BC/A420U/UC/H810B/BC/H820U/UC)	AC
S884	QSW-K0086GEZZ	J	Switch, REC	AC
S885	QSW-K0086GEZZ	J	Switch, FF	AC
S886	QSW-K0086GEZZ	J	Switch, Play	AC
S887	QSW-K0086GEZZ	J	Switch, Pause/Still (VC-A411U/UC/H811U/UC)	AC

MISCELLANEOUS PART

P881	QPLGZ0626CEZZ	V	Plug, 6 Pin	AF

MECHANISM CHASSIS PARTS

Ref. No.	Part No.	★	Description	Code
1	LBNDK1011AJZZ	V	Tension Band Ass'y	AH
2	LBOSZ1007AJZZ	V	Tension Arm boss	AD
4	LBOSZ1006AJZZ	V	Cassette Stay L	AD
5	LCHSM0184AJZZ	V	Main Chassis Ass'y	AQ
6	LHLDZ2016AJZZ	V	Loading Motor Block	AG
7	LPOLM0070GEZZ	J	Supply Pole Base Ass'y	AK
8	LPOLM0064GEZZ	J	Take-up Pole Base Ass'y	AM
9	MLEVF0518AJZZ	V	Take-up Loading Arm Ass'y	AF
10	MLEVF0519AJZZ	V	Supply Loading Arm Ass'y	AF
11	MLEVF0499AJZZ	V	Pinch Drive Lever Ass'y	AG
12	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
	or			
12	MLEVF0538GEZZ	J	Pinch Roller Lever Ass'y	
15	MLEVF0523AJZZ	V	Tension Arm Ass'y	AH
16	LANGF9620AJFW	V	A/C Head Base	AG
17	MLEVP0271AJZZ	V	Shifter Drive Lever	AE
18	MLEVP0272AJZZ	V	Pinch Double Action Lever	AD
19	MLEVP0301AJZZ	V	Reverse Guide Lever Ass'y	AL
20	MLEVP0275AJZZ	V	Reverse Guide Drive Lever	AD
21	MLEVP0292AJZZ	V	Slow Brake Lever	AE
22	MLEVP0336AJZZ	V	Open Lever	AD
23	MLEVP0293AJZZ	V	Clutch Lever	AE
24	MLEVP0324AJZZ	V	Supply Main Brake Ass'y	AF
25	MLEVP0325AJZZ	V	Take-up Main Brake Ass'y	AF
27	MSLiP0010AJZZ	V	Shifter	AH
29	MSPRD0175AJFJ	V	Reverse Guide Spring	AE
30	MSPRT0402AJFJ	V	Loading Double Action Spring	AE
31	MSPRT0403AJFJ	V	Pinch Double Action Spring	AD
32	MSPRC0213AJFJ	V	Earth Spring	AC
33	MSPRT0416AJFJ	V	Tension Spring	AD
34	NBLTK0067AJ00	V	Loading Belt	AE
35-1	NDAiV1091AJ00	V	Reel Disk 1	AE
35-2	NDAiV1093AJ00	V	Reel Disk 2	AC
36	NGERH1293AJZZ	V	Loading Connect Gear	AD
37	NGERH1295AJ00	V	Master Cam	AE
38	NGERH1294AJZZ	V	Casecon Drive Gear	AD
39	NGERH1270AJZZ	V	Take-up Loading Gear	AF
40	NGERH1271AJZZ	V	Supply Loading Gear	AD
41	NGERH1272AJZZ	V	Pinch Drive Cam	AE
43	NGERH1299AJZZ	V	Reel Relay Gear	AE
44	NGERW1070AJZZ	V	Worm Gear	AD
45	NGERW1066AJZZ	V	Worm Wheel Gear	AD
46	NiDR-0018AJZZ	V	Idler Wheel Ass'y	AK
47	NPLYV0162AJZZ	V	Motor Pulley	AD
48	NPLYV0163AJZZ	V	Limiter Pulley Ass'y	AM
49	NROLP0131GEZZ	J	Guide Roller	AL
50	NSFTP0032AJZZ	V	Tension Pole Adjuster	AB
51	MSPRC0217AJFJ	V	Guide Roller Spring	AC
52	PREFL1011AJZZ	V	Light Guide	AE
53	QCNW-8022AJZZ	V	FFC for Drum Motor	AD
55	QCNW-8021AJZZ	V	FFC for A/C Head	AD
56	QPWBF5243AJZZ	V	A/C Head PWB	AE
57	QSOCN0696REZZ	V	Socket, 6 pin	AB
58	RHEDT0036AJZZ	V	Full Erase Head	AM
59	RHEDU0089GEZZ	J	A/C Head Ass'y	AP
60	RMOTM1078GEZZ	J	Loading Motor	AP
61	RMOTN2067GEZZ	J	Capstan D.D. Motor	AY
62	RMOTP1139GEZZ	J	Drum Drive Motor (VC-A410B/BC/A411U/UC/A420U/UC)	AT
62	RMOTP1151GEZZ	J	Drum Drive Motor (VC-H810B/BC/H811U/UC/H820U/UC)	AT
63	DDRMW0029TEX5	V	Upper and Lower Drum Ass'y (VC-A410B/BC/A411U/UC/A420U/UC)	BF
63	DDRMW0030TEXC	V	Upper and Lower Drum Ass'y (VC-H810B/BC/H811U/UC/H820U/UC)	BH
65	QBRSK0041GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P04500	V	Drum Drive Motor Mounting Screw (SW2.6P+4.5S)	AB
67	PGiDC0056GEFW	J	Drum Base	AL
68	QPWBF5468AJZZ	V	PWB(LDG Motor)	AE
69	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
70	MSPRC0228AJFJ	V	Azimuth Spring	AB
71	MSPRC0224AJFJ	V	Height Adjusting Spring	AC

SCREW, NUTS AND WASHERS

Ref. No.	Part No.	★	Description	Code
201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202-1	XHPSD26P06WS0	J	C2.6P+6S(AC)	AA
202-2	LX-HZ3082GEZZ	J	WSW 2.6+6	AD
203	XJPSD26P06000	V	Screw, C2.6P+6S (For Capstan Motor)	AA
207	XHPSD30P08WS0	V	Screw, C3SP+8S (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3	AA
209	XWHJZ31-03052	V	Washer, W3.1 P-5.2-0.3	AC
210	XWHJZ31-04052	V	Washer, W3.1 P-5.2-0.4	AC
211	XWHJZ31-05052	V	Washer, W3.1 P-5.2-0.5	AC
212	XWHJZ31-06052	V	Washer, W3.1 P-5.2-0.6	AC
213	XWHJZ31-07052	V	Washer, W3.1 P-5.2-0.7	AC
214	PSPAP0009AJZZ	V	Reverse Guide Adjusting Nut	AB
216	LX-WZ1041GE00	J	CW 2.6-6-0.5 CAM	AA
218	XBPSD30P06000	V	Drum Base Mounting Screw(SW 3P+6S)	AA
219	LX-WZ1098GE00	J	CW 2.6-4.7-0.5 RED	AB
220	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
221	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
222	XBPSD26P14000	V	Screw(A/C Head)	AA
223	XWHJZ31-08052	V	Washer, W3.1 P-5.2-0.8	AC

CASSETTE HOUSING CONTROL PARTS

Ref. No.	Part No.	★	Description	Code
300	CHLDX3081TEV2	V	Cassette Housing Control Ass'y	AX
301	LANGF9592AJFW	V	Upper Plate	AL
302	LHLDX1028AJ00	V	Frame (L)	AH
303	LHLDX1030AJZZ	V	Holder (L)	AE
304	LHLDX1031AJZZ	V	Holder (R)	AE
305	LHLDX1032AJ00	V	Frame (R)	AH
306	MLEVF0469AJFW	V	Proof Lever (R)	AE
307	MLEVP0281AJ00	V	Door Open Lever	AD
308	MSLiF0076AJFW	V	Slider	AK
	or			
308	MSLiF0077AJFW	V	Slider	AE
309	MSPRD0151AJFJ	V	Proof Lever (R) Spring	AB
310	MSPRD0166AJFJ	V	Drive Gear (R) Spring	AE
311	MSPRP0175AJFJ	V	Cassette Spring	AE
312	MSPRT0381AJFJ	V	Double Action Spring	AC
313	NGERH1278AJZZ	V	Drive Gear L	AE
314	NGERH1309AJZZ	V	Drive Gear R	AE
315	NGERR1008AJ00	V	Double Action Rack Gear	AE
316	NGERR3005AJFW	V	Drive Angle Gear	AG
317	NSFTD0041AJFD	V	Main Shaft	AH

CABINET PARTS

Ref. No.	Part No.	★	Description	Code
600	GCABA3136AJSM	V	Top Cabinet	AT
601	GCABB1223AJKB	V	Main Frame	AQ
602	GCOVA2072AJKZ	V	Antenna Terminal Cover (VC-A410B/BC/A420U/UC/ A411U/UC)	AE
602	GCOVA2073AJKZ	V	Antenna Terminal Cover (VC-H810B/BC/H820U/UC/ H811U/UC)	AE
603	PSLDM4566AJFW	V	Shield Angle	AD
604	XHPSD26P06WS0	V	Screw	AA
605	XHPSD30P06WS0	V	Screw	AA
606	LANGK0197AJFW	V	Top Cabinet Fix Angle	AG
607	XEPSD30P14XS0	V	Screw	AB
608	LX-HZ3047GEFF	J	Screw	AA
609	XEBSD30P12000	V	Screw	AA
610	LX-HZ3087GEFN	J	Screw	AB
611	PSLDM4575AJFW	V	H/A Shield(Bottom)	AD
612	LHLDZ1962AJ00	V	Sensor LED Cover	AD
613	PGUMS0026AJZZ	V	Foot Cushion	AB
614	TLABM4482AJZZ	V	Model Label(VC-A420U)	AC
614	TLABM4483AJZZ	V	Model Label(VC-H820U)	AC
614	TLABM4499AJZZ	V	Model Label(VC-A410BC)	AB
614	TLABM4500AJZZ	V	Model Label(VC-H810BC)	AB
614	TLABM4501AJZZ	V	Model Label(VC-H820UC)	AB
614	TLABM4502AJZZ	V	Model Label(VC-A420UC)	AB
614	TLABM4506AJZZ	V	Model Label(VC-H810B)	AC
614	TLABM4507AJZZ	V	Model Label(VC-A410B)	AC
614	TLABM4513AJZZ	V	Model Label(VC-A411U)	AC
614	TLABM4514AJZZ	V	Model Label(VC-A411UC)	AB
614	TLABM4517AJZZ	V	Model Label(VC-H811U)	AC
614	TLABM4518AJZZ	V	Model Label(VC-H811UC)	AB
616	LHLDP1197AJZZ	V	LED Holder	AC

FRONT PANEL PARTS

Ref. No.	Part No.	★	Description	Code
500	CPNLC2707TEV1	V	Front Panel Ass'y (VC-H810B/BC)	AU
500	CPNLC2721TEV1	V	Front Panel Ass'y (VC-A410B/BC)	AU
500	CPNLC2891TEV1	V	Front Panel Ass'y (VC-A420U/UC)	AR
500	CPNLC2892TEV1	V	Front Panel Ass'y (VC-H820U/UC)	AR
500	CPNLC2906TEV1	V	Front Panel Ass'y (VC-A411U/UC)	AS
500	CPNLC2908TEV1	V	Front Panel Ass'y (VC-H811U/UC)	AS
500-1	———	-	Front Panel (Not Replacement Item)	—
500-2	GCOVA2163AJZZ	V	Timer LED Cover (VC-A410B/BC/A420U/ UC/H810B/BC/H820U/UC)	AL
500-3	HDECQ2005AJSA	V	Cassette Flap (VC-H810B/BC/H820U/UC)	AH
500-3	HDECQ2004AJSA	V	Cassette Flap (VC-A410B/BC/A420U/UC)	AH
500-3	HDECQ2360AJSA	V	Cassette Flap (VC-A411U/UC)	AH
500-3	HDECQ2361AJSA	V	Cassette Flap (VC-H811U/UC)	AH
500-4	HDECQ2160AJSA	V	Window Dec. (VC-A410B/BC/A420U/UC/ H810B/BC/H820U/UC)	AG
500-5	JBTN-2943AJSB	V	Button, REC (VC-A410B/BC/A420U/UC/ H810B/BC/H820U/UC)	AE
500-5	JBTN-3059AJSB	V	Button, REC (VC-A411U/UC/H811U/UC)	AC
500-6	HiNDP2132AJSA	V	Timer LED Indicator (VC-A410B/BC/A420U/UC/ H810B/BC/H820U/UC)	AD
500-6	HiNDP2197AJSA	V	Timer LED Indicator (VC-A411U/UC/H811U/UC)	AD
500-7	MSPRD0103AJFJ	V	Cassette Spring	AB
500-8	GCOVA2194AJZZ	V	Timer LED Cover (VC-A411U/UC/H811U/UC)	AC
500-10	JBTN-3113AJSA	V	Button, POWER (VC-A411U/UC/H811U/UC)	AD
500-11	JBTN-3038AJSA	V	Button, MENU/SET (VC-A411U/UC/H811U/UC)	AC
500-12	JBTN-3054AJSB	V	Button, CH (VC-A411U/UC/H811U/UC)	AD
501	JBTN-2942AJSA	V	Button, PLAY	AH
502	LHLDZ2066AJZZ	V	Button Holder (VC-A410B/BC/A420U/UC/ H810B/BC/H820U/UC)	AC

SUPPLIED ACCESSORIES

ACCESSORIES

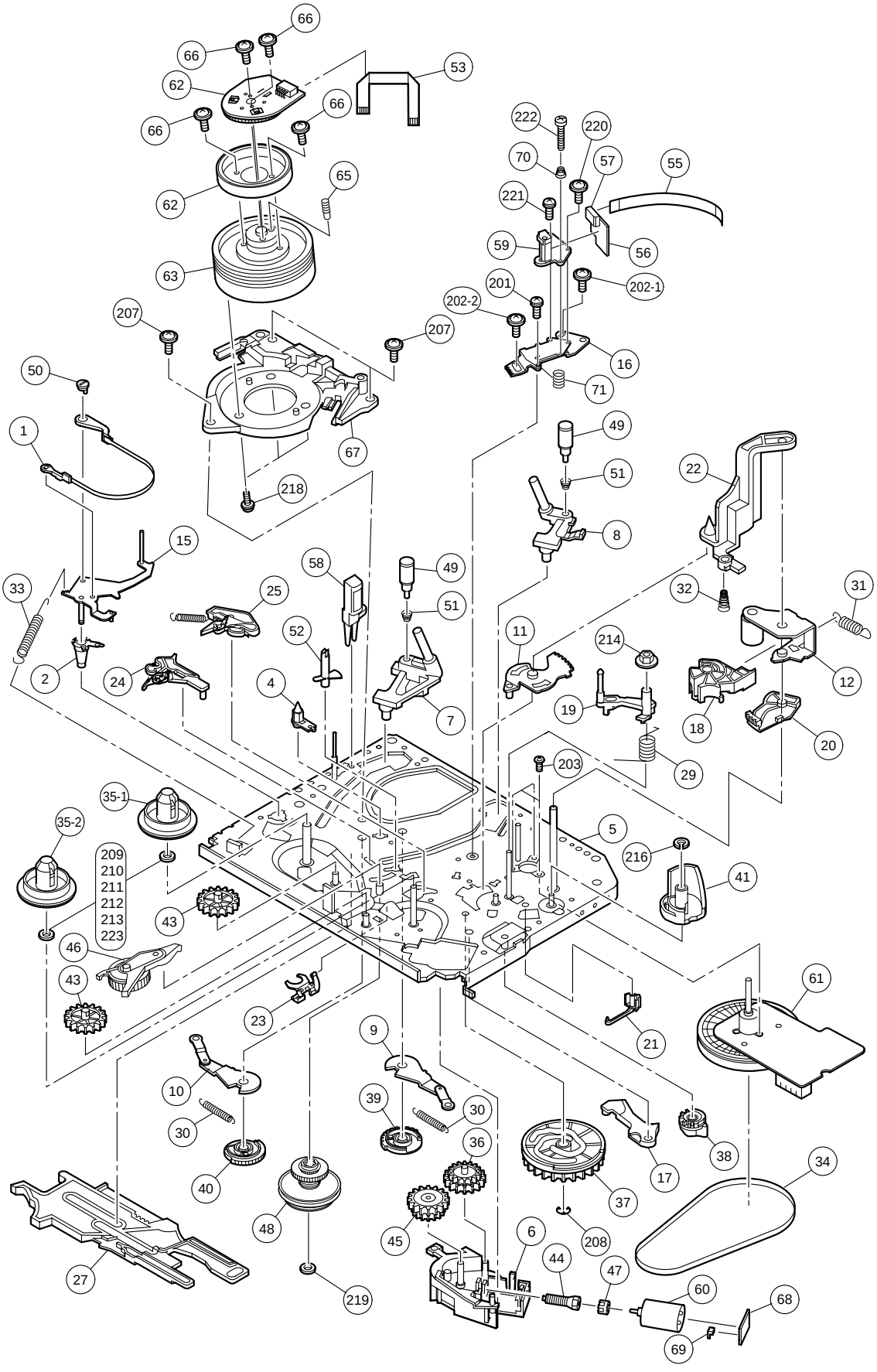
	QCNW-8530AJZZ	V	75 ohm Coaxial Cable	AF
	RRMCG1236AJSB	V	Infrared Remote Control Unit	AQ
	TiNS-3936AJZZ	V	Instruction Book (VC-A410B/BC/A411U/ H810B/H811U/H820U)	AE
	TiNS-3969AJZZ	V	Instruction Book (VC-A411UC/A420U/UC/ H810BC/H811UC/H820UC)	AG

PACKING PARTS
(NOT REPLACEMENT ITEM)

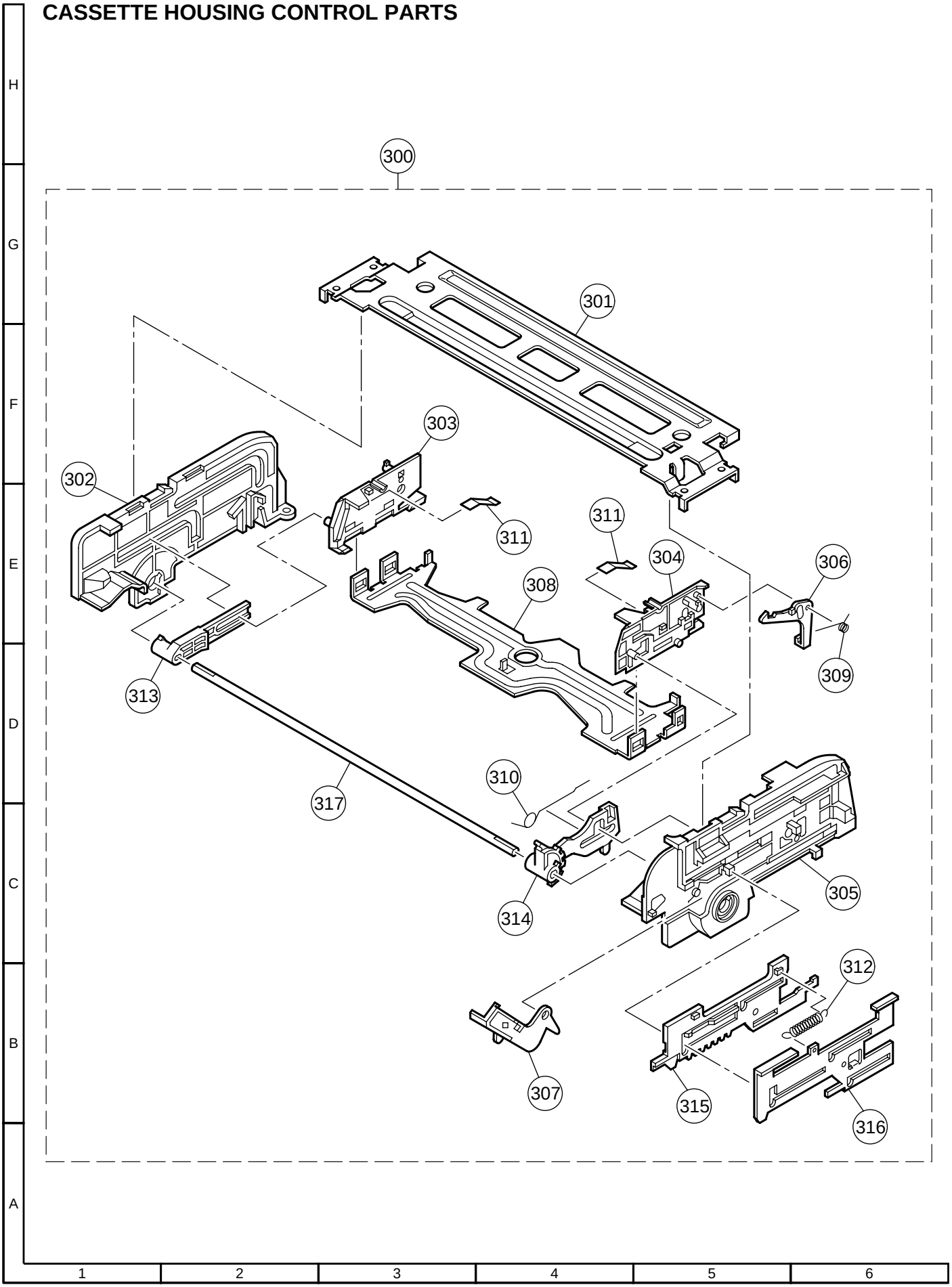
	SPAKC4267AJZZ	-	Packing Case (VC-H810B/BC)	—
	SPAKC4268AJZZ	-	Packing Case (VC-A410B/BC)	—
	SPAKC4581AJZZ	-	Packing Case (VC-A420U/UC)	—
	SPAKC4582AJZZ	-	Packing Case (VC-H820U/UC)	—
	SPAKC4668AJZZ	-	Packing Case (VC-A411U/UC)	—
	SPAKC4670AJZZ	-	Packing Case (VC-H811U/UC)	—
	SPAKX1073AJZZ	-	Packing Foam. (VC-A410B/BC/H810B/BC)	—
	SPAKX1083AJZZ	-	Packing Foam. (VC-A420U/UC/A411U/UC/ H811U/UC/H820U/UC)	—
	TLABV0182AJZZ	-	Bar Code Label	—

11. EXPLODED VIEW OF MECHANICAL PARTS

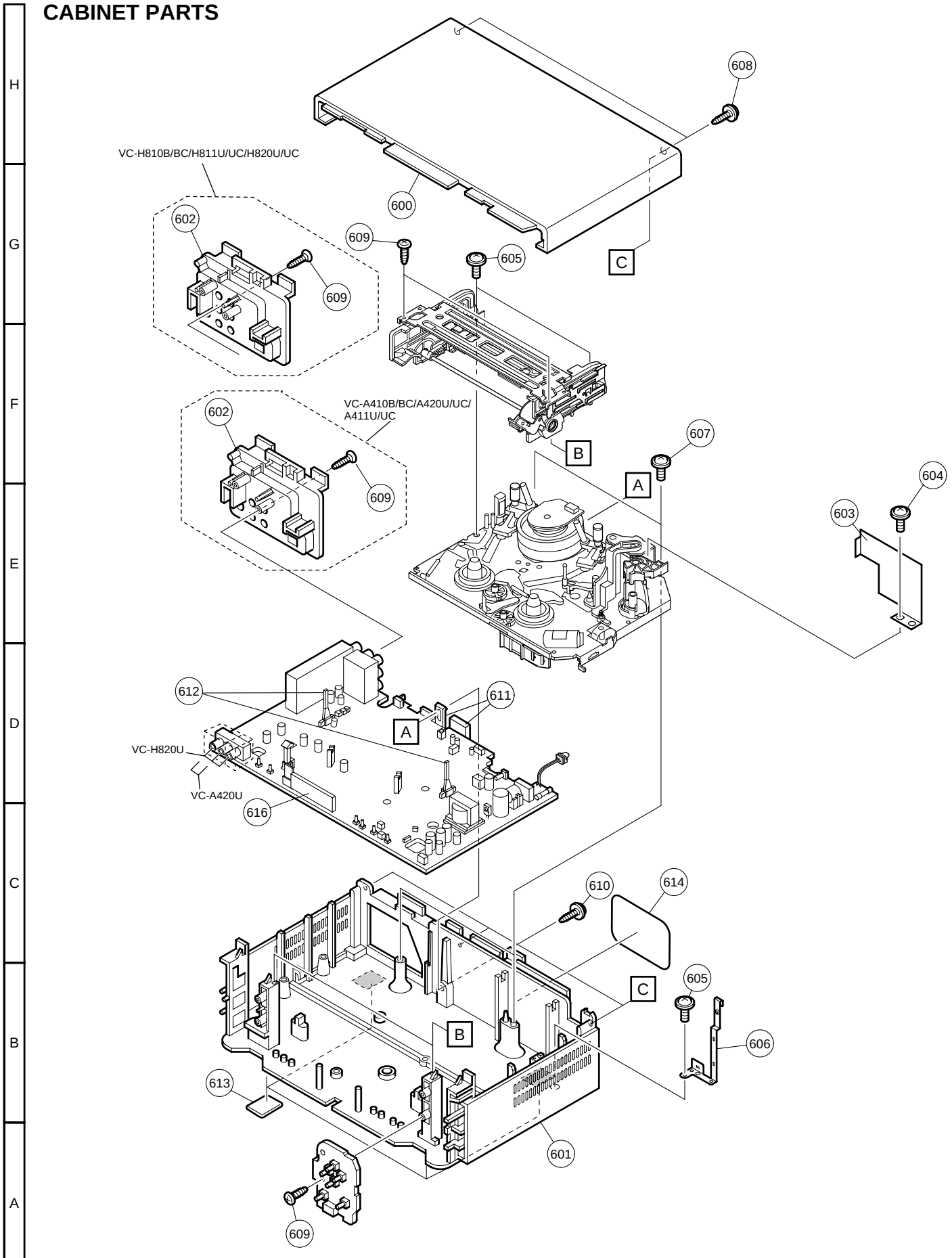
MECHANISM CHASSIS PARTS



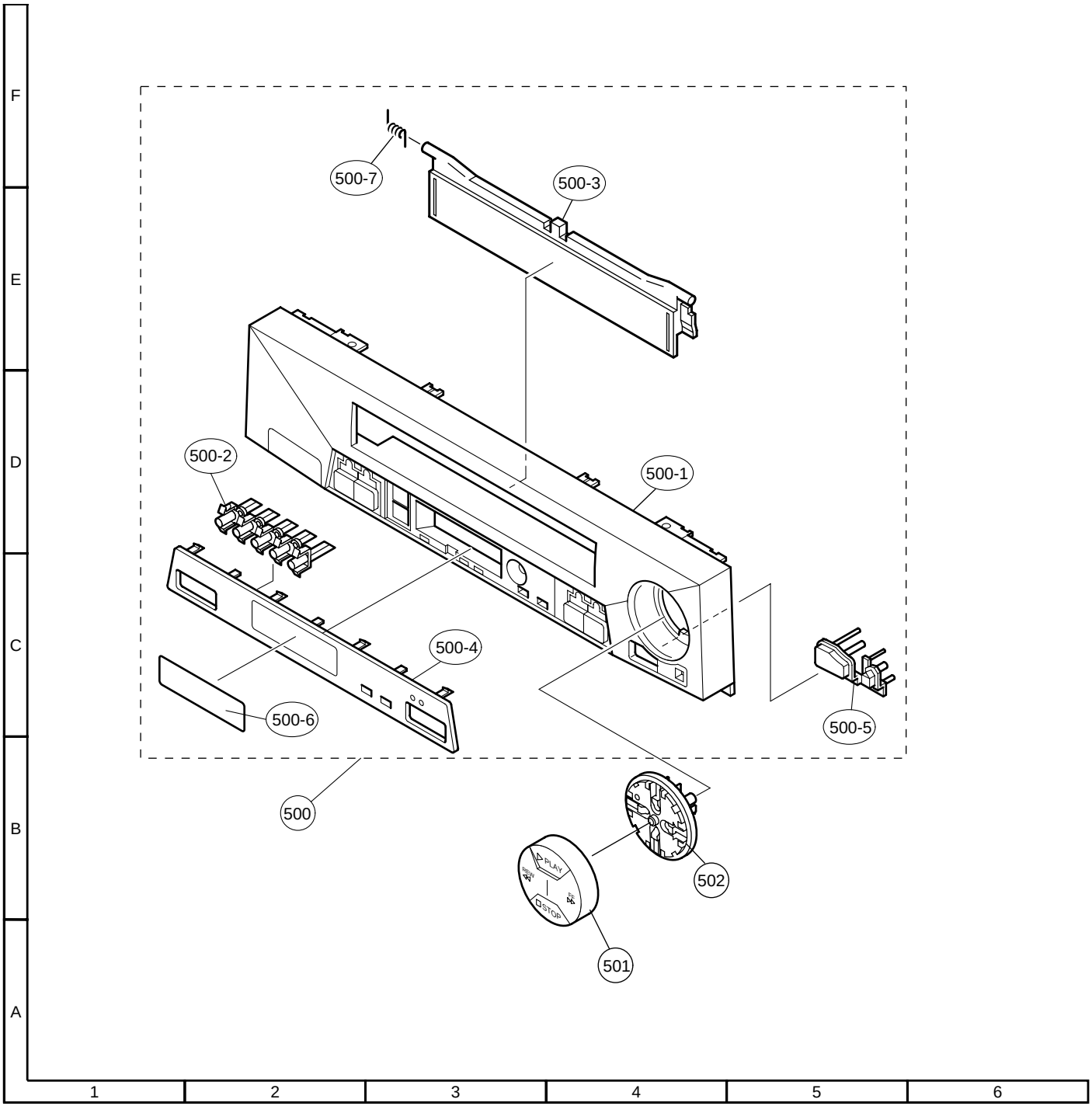
CASSETTE HOUSING CONTROL PARTS



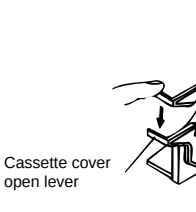
CABINET PARTS



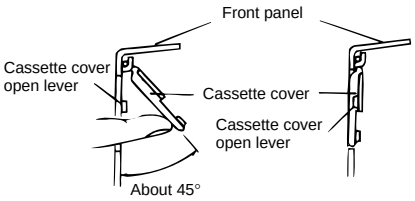
FRONT PANEL PARTS(VC-A410U(B)/H810U(B)/A420U/H820U)



PRECAUTION ON FRONT PANEL SET-UP

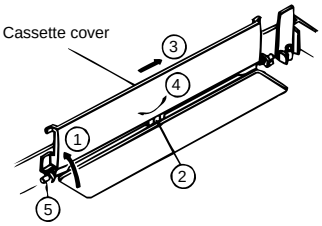


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



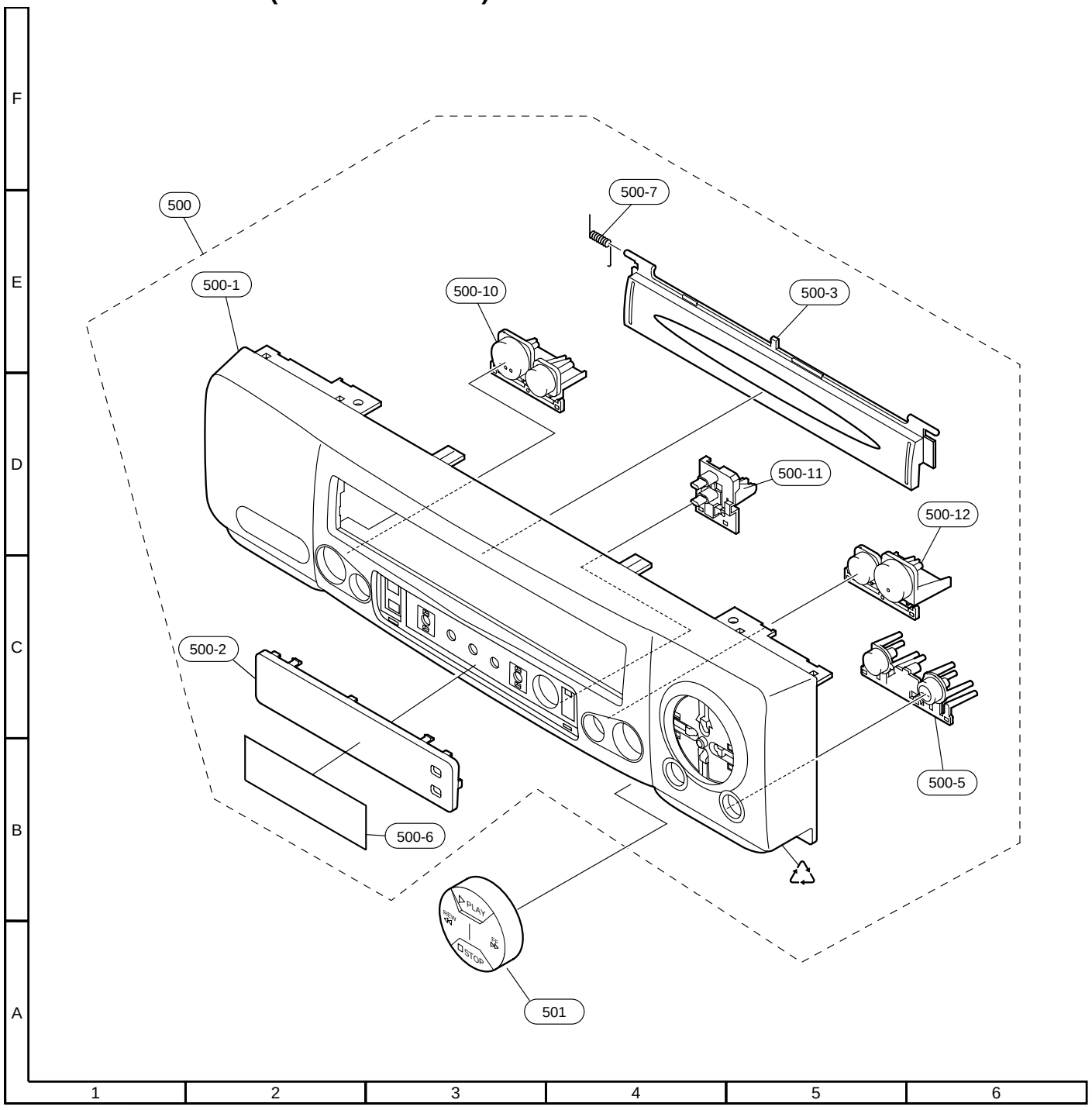
Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

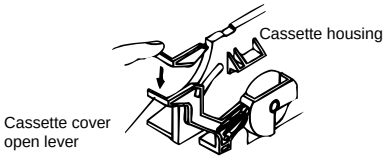


Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

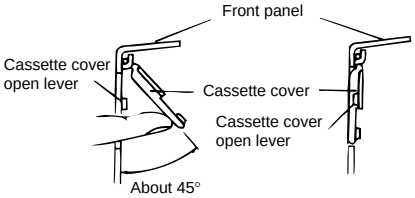
FRONT PANEL PARTS(VC-A411U/H811U)



PRECAUTION ON FRONT PANEL SET-UP

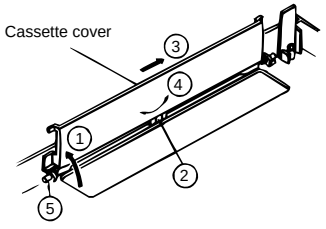


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



Keep the cassette over about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.

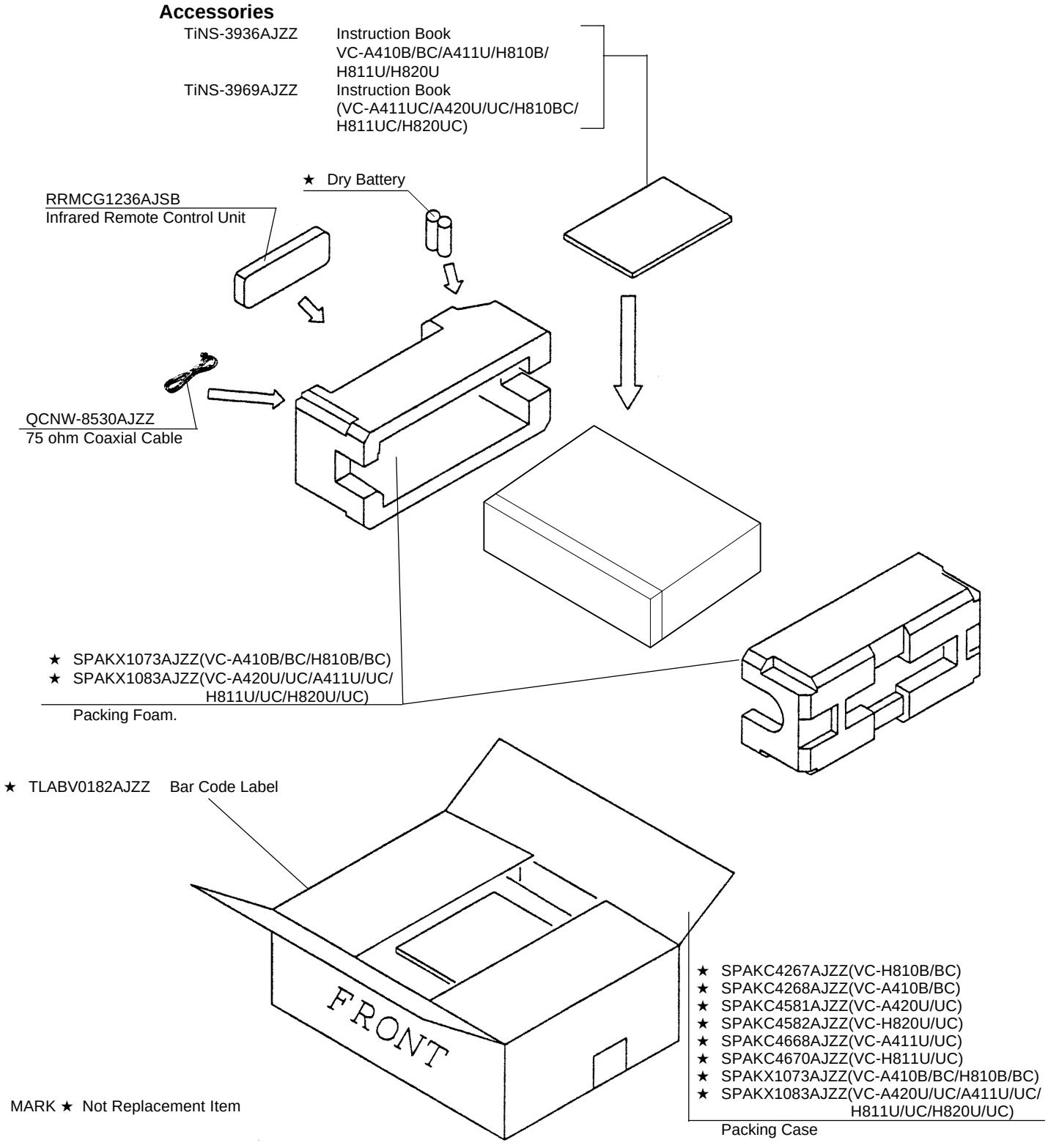


Removing the cassette compartment cover.
① Open the cassette compartment cover fully.
② Remove the center positioner.
③ Slide the cover to the right.
④ Slightly bend the cover.
⑤ Draw out the left-side rod.

12. PACKING OF THE SET

■ Setting position of the Knobs

RF conv. CH. preset	at "3" channel



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